TECHNOLOGY DEPT.

A National Newspaper for Every Branch of the Industry

First Copy

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

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PUBLIC LIBRARY MAY 2 - 1932

Detroit Expects Improved Production Rate for May, With Peak Later in Year

April Totals Available Next Week Expected to Show Gains Over March; Makers Hold Output to Demand

Detroit, April 29.—With the last week in April practically a matter of history, it is apparent that the month has followed just about the course predicted for it. Chevrolet has stepped up production, Plymouth has increased considerably and various other manufacturers have lifted output. It is notable, however, that all production increases have been made on a conservative basis. Not a manufacturer has speeded up his assembly line beyond the definite demands of his dealers.

Of course, the greatest interest has been in the efforts of the Ford Motor Company to overcome initial difficulties and get into important production on the new V-eights. There have been many rumors flying about, one particularly to the effect that all the V-eights sent out had been recalled for further changes. This rumor was undoubtedly founded on the fact that the first Ford eights sent out for exhibition purposes were the property of the company and not dealers' samples. For this reason the cars were locked and no demonstrations were made with them. Rumor jumped on this as proof that there was something wrong with the vehicles.

By way of denial it is only necessary to say that dealers' samples are now going out and by next week will be flowing in important numbers. Ford eights are being delivered over the roads to New England and to other sections, with Detroit taking its turn with other territories instead of getting preference as the city did with the Model A's.

The Ford plant here is reaching its first objective, which was 1,000 cars per day, and this will be lifted rapidly during May. While no definite announcement of a May production schedule has come from the Ford organization, it is understood that the number of units to be produced was first set at 42,000 and then was later raised to 50,000.

On Tuesday of next week Automotive Daily News will carry its regular monthly estimate of April

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PROSPERITY FLEET OF CHEVROLETS TO TOUR N. Y. AREA

New York, April 29.—Chevrolet will tour the city during the next ten days with the Prosperity Fleet, comprising an entourage of three cars and three trucks depicting the far-reaching effect of automobile business upon work and wages, according to P. R. Letts, New York Zone Sales Manager of the Chevrolet Motor Company.

Appropriately lettered with the slogan, "Let's Go, America" the Prosperity Fleet is being sent throughout the metropolitan area to show every motor car enthusiast how the sale of an automobile provides labor and employment in every market in America.

Graphically pictured on one of the floats is an industrial map of the United States showing the various products which are used in the manufacture of a motor car and their source; another itemizes the enormous quantities of steel, lumber, paint, upholstery, nickel, copper, lead and other materials that Chevrolet alone uses in one average year.

"This movement," said Mr. Letts, "will bring to the personal attention of New Yorkers many interesting facts about our largest industry. It is well worth the while of every motorist, who can, to see this interesting caravan and the statistics on an enormous business."

S. A. E. Sections Schedule Many Meetings for May

New York, April 29.—Many section meetings of S. A. E. groups are scheduled for the month of May, as follows:

Baltimore—May 12

Lord Baltimore Hotel—Dinner, 6.30 p. m.

Aeronautic meeting.

"Aspects of Commercial Transatlantic Flying," C. H. Schildhauer, General Aviation Manufacturing Corporation.

"Status of Commercial Aviation in the United States Today," Frederick R. Neeley, aeronautics branch, Department of Commerce.

Motion pictures of the Dornier DOX in flight will be shown.

Canadian—May 18

Royal York Hotel, Toronto—Dinner, 6.30 p. m.

"Motorboats," Herbert Ditchburn, president Ditchburn Boats, Ltd.

Chicago—May 3

Hotel Sherman — Dinner, 6.30 p. m.; entertainment.

Joint meeting with the Aeronautical Chamber of Commerce of America.

"Airship Development," V. R. Jacobs, assistant manager aeronautical department, Goodyear Tire and Rubber Company.

"Engineering and Its Relation to Aviation." Talk by representative of the Aeronautical Chamber of Commerce of America.

Motion pictures of the U. S. S. Akron will be shown.

Cleveland—May 9

Golf tournament, Firestone Country Club, 12 noon to 5.30 p. m.

Inspection trips through Goodrich, Goodyear and Firestone Steel Products plants, 2.30 to 5.30 p. m.

Dinner at Goodyear Plant, Akron, O., 6 p. m.; meeting in Goodyear Theater, 7.30 p. m.

"New Applications of Rubber from a Research Viewpoint," J. W. Schade, director of research, B. F. Goodrich Company.

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Senate Committee Approves House Automotive Excise Tax Program

Industry Plans to Carry Fight to Floor of Senate; Statistics Show Present Tax Is 20.1% of Car Values

Washington, D. C., April 29.—The Finance Committee of the Senate has approved by a vote of 12 to 5, the recommendations of the House Ways and Means Committee for automotive excise taxes. The schedule provides a 3 per cent. tax on passenger cars, a 2 per cent. tax on motor trucks and a 1 per cent. tax on parts and accessories.

Senator James Couzens of Michigan led the attack on the automotive excise tax provision, but the committee voted down his motion to strike all these taxes out of the bill by a majority of 12 to 5.

The automotive industry will now have to carry its fight against this discriminatory tax impost to the floor of the Senate and Senator Couzens will undoubtedly lead the fight there. Regardless of the fate of the tax proposition as a whole, there is high hope that the 1 per cent. tax on parts and accessories, which would yield only $6,000,000 anyway will be eliminated as an imposition on misfortune, which it plainly is.

In connection with the proposed taxation of the automotive industry, Thomas P. Henry, president of the American Automobile Association, released some interesting statistics prepared by his organization. American motorists in 1931 paid $1,025,779,876 in registration and license fees, gasoline and personal property taxes, Mr. Henry stated. This exceeded by 2.5 per cent. the total paid in 1930 and were made in the face of a decline of 731,178 in motor vehicle registration. He continued:

"This tax bill, on the basis of a valuation of $5,105,257,524, means that car owners paid 20.1 per cent. of the value of their property in taxes.

"The total tax bill, the highest in the history of the automobile, consisted of $344,337,654 in registration and license fees, $536,578,086 in gasoline taxes, and $144,864,136 in personal property levies.

"In 1931 the average tax per motor vehicle for the country as a whole was $39.74, and there was an increase in the average tax in forty-four states as compared to 1930.

"In view of the burden disclosed by these figures and that both Federal and state governments are considering further levies, it is not surprising that motor vehicle taxation is developing into a real political issue."

NEW SUPER-CHARGED DUESENBERG CHASSIS, 320 H. P., ANNOUNCED

Connersville, Ind., April 29.—Announcement was made today by H. T. Ames, president of Duesenberg, Inc. of a new 320 horse power supercharged Duesenberg chassis in addition to its regular 265 horse power chassis.

The new chassis is built in the usual two wheel bases, 142½ inches and 153½ inches, and the general specifications of the chassis remain the same with the exception of larger bearings and wearing surfaces for those parts subjected to the increased horse power. The supercharger used is of the centrifugal type, mounted on the right, or exhaust side, of the motor in a horizontal position. It is driven by the right motor accessory shaft and a perpendicular drive shaft to the super-charger itself, which is located just above the cylinder head at the center of the motor.

The unit is twelve inches in diameter and turns six times motor speed. It delivers approximately eight pounds of pressure at 4,000

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BIG TRUCK FIRMS THREATEN TO QUIT N. J. IN TAX BOOST

Trenton, N. J., April 29.—Leading trucking concerns here declared today that they would buy their gasoline supply out of the state if the gasoline tax in New Jersey is increased from three to five cents, as now proposed. Two of the largest, C. Louis Lavine and W. W. Kirby, said they would move their headquarters from Trenton to Morrisville, Pa. Word from all along the Delaware Valley was that hauling companies operating on the Jersey side will buy gasoline in Pennsylvania.

Lavine, speaking for himself and for Kirby, said New Jersey would lose $900 tax on the 30,000 gallons of fuel the two firms use monthly. He said that if the tax is increased to five cents, as proposed by Gov. Moore and legislative leaders, to go into effect June 1, the two companies would have to pay $1,500 a month in taxes if they stayed in this state. Rather than pay this sum, they plan to remove to Morrisville and get the advantage of the three-cent tax rate there.

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DE SOTO DEALERS HAVE RECORD WEEK

Detroit, April 29.—All weekly sales records in the history of the De Soto dealer organization were broken during the week ended April 23 when retail deliveries mounted to the new high total of 1,787 cars. This figure includes Plymouth sales by De Soto dealers in addition to De Soto.

Business during the week showed a 100 per cent. gain over the corresponding week of last year, when

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$1,000,000 AUBURN SALES BRANCH OPENS IN LOS ANGELES

Los Angeles, April 29.—A million dollar building program here by E. L. Cord, president of the Auburn Automobile Company, has been completed with the formal opening of the magnificent new Auburn-Cord building as the southern California distribution center for Auburn, Cord, and Duesenberg motor cars. Thousands of residents of Los Angeles and surrounding cities attended the opening to inspect the new structure.

The building, designed and constructed under the supervision of Mr. Cord, is four stories in height with a large penthouse providing additional office space. The exterior is finished in white limestone with a base trim of black marble. Fronting Wilshire Boulevard for 140 feet, the building extends back 200 feet on Mariposa Avenue.

The entire front on the Wilshire Boulevard side is devoted to a spacious showroom which has 7,000 square feet of floor space for display of Auburn, Cord, and Duesenberg cars and other products of

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DODGE NAMES MUIR CHICAGO TRUCK CHIEF

Chicago, April 29.—Appointment of Robert S. Muir as regional truck representative with headquarters in this city is announced by O. J. Paul, Chicago regional manager, Dodge Brothers Corporation.

Muir will have complete jurisdiction over all truck sales operations in the Chicago region, and will supervise the work of truck sales representatives.

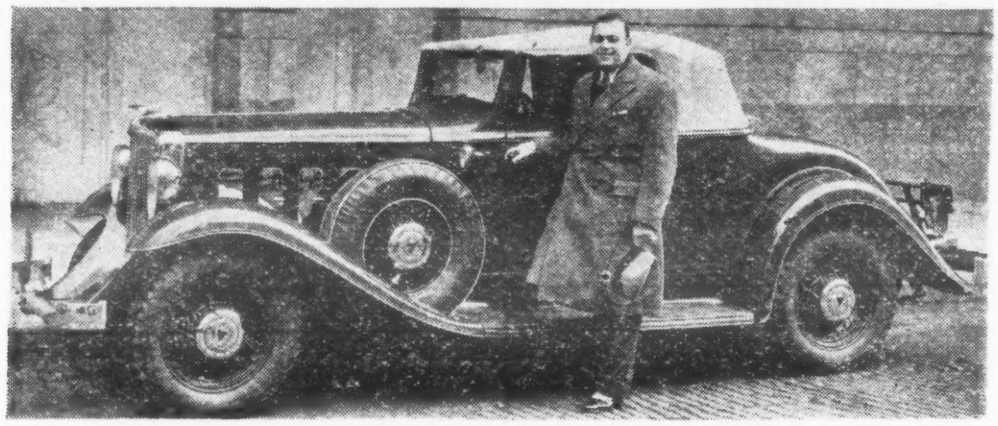
Hudson and Essex Add Convertible Coupe Models

Detroit, April 29.—The Hudson Motor Car Company today announced the introduction of two new convertible coupes, one a Hudson and the other an Essex. These new comers, it is stated, can be changed from closed to open cars and back again at a moment's notice.

Both these convertibles have tailored tops, which fold back into a deep recess just back of the driver's seat and practically flush with the deck. A glove fastener cover of the same cover as the top, fastens over the latter when it is folded, to give the cars a sport, streamline effect. The manufacturer calls attention to the fact that with this convertible model, a closed coupe for two passengers, may be changed into an open roadster for four almost instantly, by lowering the top and utilizing the rumble seat.

The new Hudson convertible is powered by the 1932 eight cylinder Hudson engine, which claims a speed in excess of eighty miles per hour. The Essex convertible has the Essex super-six engine. The standard features of the lines are found in these new jobs, including free wheeling, ride control, V-type radiators, adjustable seats and silent second gear.

New Hudson Convertible Coupe



HUDSON MOTOR COMPANY today announces the addition of a new convertible coupe to its present Hudson and Essex body types. The new body will be available on both lines of cars

S. A. E. Sections Schedule Many Meetings for May

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"Influence of Recent Tire Development on Rim Design," W. S. Brink, development engineer, Firestone Steel Products Company.

"Air Wheels," Rhys Adams, research technologist, Goodyear Tire and Rubber Company.

Detroit—May 9

Book-Cadillac Hotel—Dinner, 6.30 p. m.

"Engineers Have Lots to Do," C. F. Kettering.

Indiana—May 4

Anderson, Ind.—Dinner, 6.30 p. m.

Visit to plant of Delco-Remy Corporation in the afternoon.

Joint production meeting with American Society for Steel Treating.

Indiana—May 23

Hotel Severin—Dinner, 6. 30 p. m.

Indianapolis Speedway race meeting.

"Advance Information on Racing Cars and New Trends," speakers to be announced later.

Metropolitan—May 19

A. W. A. Clubhouse, 357 West 57th St., New York City—Dinner, 6.30 p. m.

Joint meeting with the Aeronautical Chamber of Commerce of America.

"Engineering and Its Relation to Aviation," J. S. Allard, vice-president and general manager Curtiss-Wright Corporation.

Major-Gen. James E. Fechet, former chief of the Army Air Corps, will talk on aviation.

Milwaukee—May 4

Seaman Body Corporation plant inspection trip, 2 p. m.; dinner, 6.30 p. m., at Milwaukee Athletic Club; entertainment.

"Development of Automobile Manufacturing in Milwaukee," Harold H. Seaman, president Seaman Body Corporation.

"Trends in Automobile Designing," C. H. Bliss, vice-president and director of sales, Nash Motors Corporation.

Oregon—May 6

Multnomah Hotel, Portland—Dinner, 6.30 p. m.

"Properties of Gasoline and Lubricating Oils," Chester Arents, Oregon State College.

Pittsburgh—May 18

Norse Room, Fort Pitt Hotel—Dinner, 6.30 p. m.

Annual frolic.

Syracuse—May 17

Hotel Syracuse—Dinner 6.15 p. m.

"Recent Development of Small Motorboats and Maring Engines," Volney E. Lacy, designing engineer, Rochester Boat Corporation.

BUYING OF STEEL FOR AUTOMOBILES GAINS NOTICEABLY

Youngstown, O., April 29.—Buying of steel for automobiles has increased noticeably here during the last few days, as a result of which several sheet and strip fabricators in the Mahoning Valley report substantial increases in mill operations.

One idle sheet plant resumed production April 27 with orders accumulating recently. This plant, operated by the Mahoning Valley Steel Company, is rolling on a 75 per cent. basis. Other increases in operations are reported by Republic Steel Corporation, and Youngstown Sheet and Tube Company. Republic is operating all three strip mills at its plant at Warren, O., while Sheet and Tube was scheduled to resume activity at its Campbell sheet plant today.

Ford buying in this district is said to have shown a further increase, although shipments to this consumer are not yet up to expectations. When the Ford plant schedule is increased according to present plans concommitant increases will take place in operations of various district steel fabricators. Carnegie Steel Company, producer of automobile shapes in large quantities at its Youngstown plants, is operating six of fifteen open-hearth furnaces, against five recently, and is operating on a slightly higher basis this week at its Farrell, Pa., plant.

Valley trade authorities report that district production is at 30 per cent., but that a moderate advance from that level within the next few days is likely.

Gary, Ind., April 29.—Much of the steel scrap moving into Gary, the home of the Illinois Steel Company, is understood to be from wrecked automobiles. There is quite a little of this material being offered. Lists from six auto plants involve about 135 cars. They are chiefly from Dodge, Chrysler and Plymouth.

Youngstown, April 29.—Shipments of light and heavy iron and steel scrap to Youngstown district mills are showing a moderate increase, indicating higher melting schedules are in prospect. Dealers report releases on old contracts are better and find a distinct betterment in sentiment.

Improvement in automobile steel buying is bolstering melting operations, increasing requirements for old metal, of which stocks in mill yards are small. Several independent companies are taking scrap this week.

Heavy melting steel is quoted at $10 flat, unchanged from a week ago, while hydraulic compressed sheets are quoted at $9.50 to $10 a ton and other classes are being maintained at recent levels.

PONTIAC SHOPS FORM SERVICE ASSOCIATION

Pontiac, April 29.—Pontiac automobile repair men have formed an organization to be known as the Automotive Service Association of Pontiac, for the purpose of co-operating with automobile owners to make possible repairs on the time payment plan.

Gordon G. Bowman of the Bowman Body Works, was named president; Robert Garrison of Hartman & Garrison, treasurer; O. R. Peters of Peters Garage, vice-president, and Fred B. Elliott, secretary. Speakers of national prominence are to be brought to future meetings.

FINANCIAL NEWS

PACKARD MOTOR

Detroit, April 29.—Packard Motor Car Company and subsidiaries report for quarter ended March 31, 1932, net loss of $1 563,983 after depreciation and taxes. This compares with net income in first quarter of 1931 of $113,004 or less than one cent a share on 15,000,000 shares of no par capital stock.

ELECTRIC AUTO-LITE

Toledo, April 29.—Electric Auto-Lite Company and subsidiaries report for the quarter ended March 31, 1932, net profit of $547,680 after charges, depreciation, Federal taxes, etc., equal after 7 per cent. preferred dividends to 53 cents a share on 897,509 no par shares of common stock. For the first quarter of 1931, the company reported profit of $1-169,762 after charges, depreciation, etc., but before Federal taxes.

NEW HAVEN CLOCK

New Haven, Conn., April 29.—Directors of the New Haven Clock Company have taken no action on the quarterly dividend of $1.62½ a share on the preferred.

PEERLESS MOTORS

Cleveland, April 29.—Peerless Motor Car Corporation has declared another cash distribution of $1 a share, payable on May 14 to stock of record May 9. This follows closely on the recent $3 a share cash dividend paid on April 25. The only statement made by Peerless recently is that the company has no immediate manufacturing schedule and is distributing to its stockholders cash resources not needed in the business.

NATIONAL STEEL

New York, April 29.—National Steel reports for the initial three months a net profit of $592,799 after charges, depreciation, Federal taxes, etc., equivalent to 27 cents a share, as compared with $2,155,905, or 89 cents a share, in the corresponding 1931 period. E. T. Weir, chairman, informed directors yesterday that buying of steel has increased slightly since the end of March and that the company's operations are now at a somewhat higher rate than prevailed last month.

WHEELING STEEL

New York, April 29.—Wheeling Steel Corporation reports for the first quarter of 1932 net loss of $823,137 after depreciation, interest, etc., comparing with net loss of $628,623 in the same period last year.

CLEVELAND-CLIFFS IRON

New York, April 29.—Cleveland-Cliffs Iron Company reports for 1932 net loss of $21,360 after interest, depreciation, depletion, taxes, etc. In 1930 the company reported net profit of $4,886,150, equal, after dividends on the $5 preferred stock and nine months' dividends on the $6 preferred stock of McKinney Steel Holding Company, to $5.14 a share on 408,296 shares of no-par common stock. The annual meeting of stockholders has been postponed until May 11.

REYNOLDS METALS

New York, April 29.—Reynolds Metals Company reports for the quarter ended March 31: Net earnings after charges, $267,103, equal to 35 cents a share on 768,749 shares of capital stock outstanding, compared with 44 cents a share in first quarter last year. On March 31 the ratio of net current assets, which includes $1,175,125 cash, to current liabilities was 5.6 to 1, compared with a ratio of 4.72 to 1 on December 31.

BUTTE COPPER AND ZINC

New York, April 29.—Butte Copper and Zinc Company reports for the quarter ended March 31: Net profit after expenses and taxes, $4,-753, contrasted with net loss of $1,395 last year.

DE SOTO DEALERS HAVE RECORD WEEK

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sales totaled 894 units. The factory announces the best previous week in the organization's history, as the week ended August 1 of last year, when 1,745 cars were sold at retail.

For the year to date sales of De Soto and Plymouth cars by De Soto dealers are running 60 per cent. ahead of the corresponding period of last year.

SPARKS from DETROIT

Today and Yesterday

Peeping at Hudson

Cliff Durant

Hudson to Race

Chris Sinsabaugh—Detroit Editor

ONE can best appreciate the difference between our today and our yesterday by scanning registration figures. Automotive Daily News estimates the first quarter's registration of passenger cars at around 256,000 units. Why, in one month of this depression, March, 1930, we had more titling than in this year's first quarter, 288,000 tags having been issued.

When we go back to 1929 we find the banner month in production, the best on record. In April of that year, the N. A. C. C.'s Detroit office tells the column there were 663,811 motor vehicles manufactured, of which number 573,303 were passenger cars. This included exports and American units built in foreign assembly plants.

* * *

I PEEPING TOMMED the new Hudson-Essex job Wednesday, in advance of its premiere, which will be today, when the formal announcement is being made that a convertible coupe body type, in both Hudson and Essex, is now ready for the customer.

Rand Dustman came around with an Essex thus bodied, and, donning the preview glasses, I gave it the double O. I can say yes to all your inquiries about it. But my thrill came in being let go behind the scenes and finding that the factory is soon to announce something new in the way of clutch control, which most likely will be standard equipment. The glimpse I got of the device intrigued me. It looks as though it takes one more load off the driver's mind. Soon there will be nothing left for him to do but steer and tell the gasoline man to fill 'er up.

* * *

INASMUCH AS HE IS THE SON of W. C. Durant, and himself a former California automobile manufacturer, the industry is interested in the entry of Cliff Durant in this year's 500-mile race at Indianapolis. In this classic he will pilot one of Harry Hartz's cars.

To Cliff Durant, the sweepstakes is a motoring holy grail. An Indianapolis victory is the height of his sporting ambition, and he has chased that will o' the wisp since 1919. He has driven in seven of the eighteen classics, he has spent a fortune building cars for it, and he never has finished. He tried in 1919, 1922, 1923, 1924, 1926, and, last, in 1928. In the last named, he made his best showing, going 437 miles. And he always has been regarded as a race driver of the first flight.

* * *

INDIANAPOLIS is very much in the limelight in Detroit at present, because of this week's announcement that Hudson, which finished tenth last year, under the name of the Marr Special, has nominated two cars for this year's race. Both these will race as Hudsons, the factory having come out into the open, as has Hupmobile, and admitted that it is back of Buddy Marr in trying to bring home the bacon.

TEXAS AUTOMOTIVE JOBBERS HOLD MEETING

Dallas, Tex., April 29.—Fifty automotive jobbers of Texas met in sales convention at the Dallas Athletic Club a few days ago with a banquet at night sponsored by the Motor Parts Depot, Inc., 2204 Commerce St. Barton Wright, vice-president and general manager of the firm, was toastmaster.

Motor Parts Depot, Inc., is a Texas subsidiary of Central Motor Parts, Inc., Indianapolis, Ind., which has seventeen units in Minnesota, Michigan, Illinois, Kentucky, Missouri, Ohio, Kansas and Texas, four of them being in Texas.

Leading speakers at the meeting and banquet were R. W. Boozer, president, Central Motor Parts and Motor Parts Depot, Inc.; D. N. Test, secretary-treasurer, Central, both of Indianapolis; C. E. Hamilton, president Automotive Gear Works, Richmond, Ind.; K. H. Glanton, vice-president Dayton Rubber Company, Dayton; H. A. Gillies, vice-president and general manager American Brake Material Company, division of American Brake Shoe and Foundry Company, both firms of Detroit; Story Larkin of Sidener, Van Riper & Keeling, advertising counsel.

Retail Salesmen—This Is Your Page

This department is devoted to the interests of the retail sales division of the industry. Salesmen, this is your department. Automotive Daily News wants you to get something from this department that will help you in your work on the firing line. It wants you to pass on your own experiences, successes, failures to help your brother salesmen. Send in your story in the form of a letter, or even a postal card, and let us get it ready for publication. Your achievement or your mistake may help another salesman to make sales or avoid errors that cost you commissions.

Dealers read this page. Give us the benefit of your reactions on these problems that affect the work of your salesmen, the men on the firing line, the men who bring home the bacon or don't.

EVERY DEALER SHOULD HAVE SET DEMONSTRATION ROUTE

In the current issue of the Willys-Overland Starter there is an extremely interesting article advising all dealers to establish a standad demonstration route. This is good advice, not only for Willys-Overland dealers, but for merchants handling other makes of cars, and we pass it on for the benefit of all our readers:

Every Willys-Overland dealer should establish a standard demonstration route over which each demonstration will be made.

It is a simple matter to lay out such a route so that each feature of the cars will be demonstrated in logical order.

Make a map of the route to be covered and the exact points where specific features are to be proved (see sample above). You can then have this map printed or blueprinted at small cost.

When a demonstration is being made, the salesman hands the map to the prospect, explaining that this route will be followed, because it includes every type of road condition that he will encounter in everyday service. The salesman then calls the prospect's attention to the position on the map as the different points are reached.

The advantages of the planned demonstration, over a standard route, are:

1. Enables the salesman to convert every demonstration into a conscientious selling effort, eliminates "joy rides," and thus saves time.

2. Eliminates possibility that salesman might neglect to demonstrate the very feature that would be the deciding factor.

3. Enables salesman to maintain control of the interview, and thus tell the whole story. When the prospect asks questions, he can steer the conversation right back to the next point on the chart.

4. Frequent demonstrations over the same route familiarize the salesman with every road condition, so that he can always give an impressive demonstration of each feature, knows what to do, and what not to do. "Practice makes perfect."

5. Makes it possible for salesman to standardize the selling talk used on each demonstration. By constant repetition, he learns exactly what to say and how to say it, to leave most favorable impression.

6. Dealer or retail manager knows, when asked to help close deal following demonstration, precisely how to proceed because he knows every feature prospect can want was covered in demonstration.

A single slip in a demonstration, often apparently unimportant to the salesman, can quickly kill the prospect's interest in Willys-Overland.

No one can estimate how many sales have been lost when the salesman, unknowingly, frightened the prospect. Assume that all people are nervous when the driver takes the slightest chance. And remember that while you may not think you are taking chances, if the prospect feels you are, you have built up unnecessary resistance. Very few people would admit this fear, but if you cause them to press their feet against the floor board, you are not conducting the right sort of demonstration.

Make sure that the prospect thoroughly understands each feature of the demonstration as you go along. By strategic questioning, get him to admit Willys-Overland's superiority as each point is proved. One thing at a time—and that well done—is a cardinal rule for good demonstrations.

Spend the most time on those features which interest the prospect most.

If you start, and end the demonstration at the show room, the prospect must return there with you to get his old car. Now, if you have proved what you set out to prove, this is your best chance to close him. He will want the new car more now than at any other time. And if you need help, the dealer or retail manager will be there to assist.

It goes without saying that if other members of the prospect's family are to have a voice in the selection of the car, they, of course, should be taken on the demonstration.

WEST PHILADELPHIA MOTOR ADDS DODGE AND PLYMOUTH

Philadelphia, April 29.—The West Philadelphia Motor Company, 4225-31 Chestnut St., has taken a dealership for Dodge and Plymouth cars and will continue, as during the last six years, to sell Packard cars. Ed Dougherty is president of the company.

VIRGINIA, CAROLINAS WHOLESALERS ORGANIZE

Charlotte, N. C., April 29.—A dozen or more executives of automobile supplies wholesalers have organized the Virginia-Carolinas Automotive Wholesalers' Association at a recent meeting in Greensboro. Thomas McP. Glasgow of Charlotte, head of the Glasgow-Stewart Company, was elected president of the organization.

The first annual meeting will be held in Greensboro July 20 and 21, according to Mr. Glasgow. Other officers elected are O. B. Barker of Lynchburg, Va., vice-president, and William Butt of Norfolk, Va., secretary and treasurer.

BENNIGHOF-NOLAN NAMES NEW DEALERS

Evansville, Ind., April 29.—Four new Willys-Overland dealers have been signed by the Bennighof-Nolan Company, distributor in southern Indiana and Illinois and western Kentucky, Henry F. Bennighof, wholesale manager, reported. They are Jarboe Motor Sales Company, Tell City; C. P. Morgan, Murray, Ky.; H. B. Tischendorf, Mount Vernon, Ind., and Willys Sales and Service, Sullivan, Ind.

NEW ORLEANS FRANKLIN HOLDS FORMAL OPENING

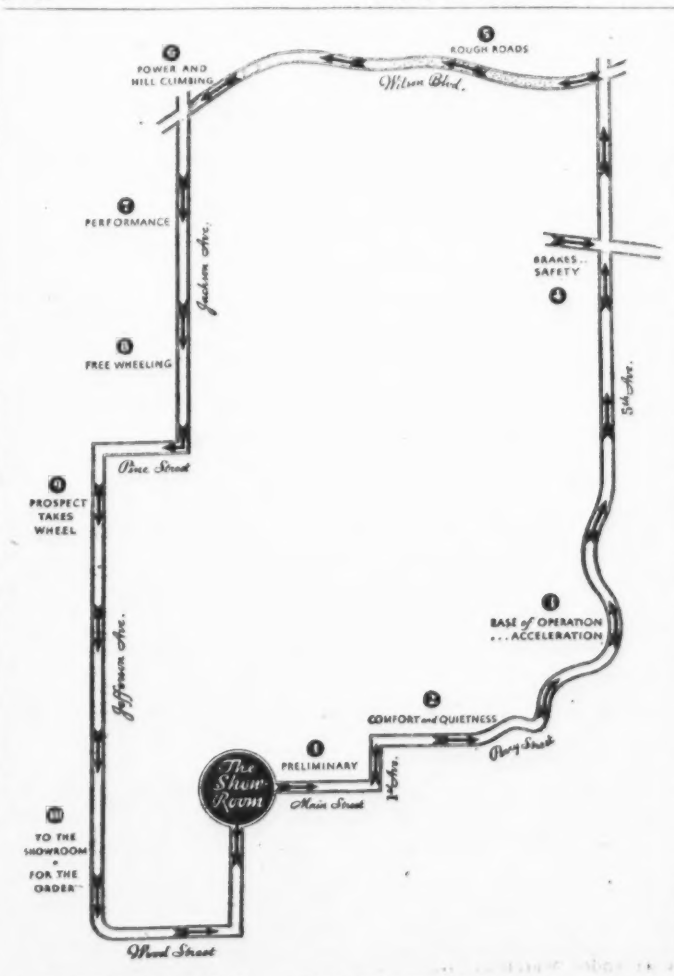
New Orleans, La., April 29.—A new automobile concern, the New Orleans Franklin Company, 730 St. Charles St., headed by Manuel Gutierrez, president, and George Maher, vice-president and general manager, held its formal opening here recently as the new Franklin distributor for the Southern half of Louisiana and the Mississippi Gulf Coast.

SYRACUSE MOTOR CO., INC. IN LARGER QUARTERS

Syracuse, N. Y., April 29.—The Syracuse Motor Car Company, Inc., Auburn and Cord distributor and its subsidiary organization, the Syracuse Motor Marine Corporation, distributor of Chris-Craft motor boats and marine equipment, has removed to larger and more commodious quarters at 543 East Genesee St.

TAKES PONTIAC LINE

Evansville, Ind., April 29. — Kent Bass, Inc., Oldsmobile dealer, has been named sub-dealer for the Pontiac lines, James Buchanan, manager, stated.



A TYPICAL demonstration route. Note how salesman has chance to show all car's good points

PRACTICAL APPLICATION OF THE FIVE BUYING MOTIVES

This is the third installment of a specific sales case in which every one of the five motives, as set forth in the La Salle Extension University salesmanship course, are contained. The details of how the sale was made continue:

"But Clarke was getting wise to what was happening. He tried to conceal a smile, but she discovered it, and when she saw that she was caught, she confessed: 'Well, anyway, the Davidsons are getting a new car!' At which Clarke laughed long and loud, and she smiled rather sheepishly, but rather determinedly, too.

"Well, right then and there whether he realized it or not, Mr. Clarke bought the new car for the Clarke side of the street!

"'You certainly fell in love with that car, didn't you, dear?' he smiled. Then he turned to me and grinned, 'Oh, well. I can see you and Mrs. Clarke win.'

"'We all three win, Mr. Clarke, don't we?'

"I couldn't help saying it, because I knew he was having rather a hard time trying to convince himself that his old car really was ripe for a trade-in.

"'Yes, I guess you're right, Mr. Owens. I guess by the time we'd got the old bus really fixed up we might be a good deal out of pocket. And not so much to show for it after all. What was it your man said you'd allow us on the old one?'

"I told him, and, as he had previously admitted it was 'probably a fair figure,' he stuck by his decision and didn't question it this time.

"I'd had nerve enough to get an order ready and all filled out for his signature, and I opened it right then and there. And Clarke evidently had his mind made up, for he didn't hesitate a moment, but signed on the line. Which left us feeling pretty good all around!

"I promised delivery for Monday, Mr. Carroll. Can we make it?"

In the light of what we have seen in assignment one and in the first two parts of this assignment, let's examine this sale and see why, in the first instance, it failed, and then later, upon the third call, was successful.

Think of your five decisions! That's where the trouble lay!

Obviously, Decision 1 had been made by the Clarkes. They owned a car and had decided to get another one some time.

Decision 2, that Owens' car was the car they would some day buy, was doubtless arrived at by the Clarkes during the presentation and demonstration.

Decision 3, that the firm of Long & Carroll was truly representative of the factory from the standpoints of service, stability and reliability. This decision obviously was made during the first interviews, because they admitted that when they were ready to buy they would buy from Owens.

Decision 4 was not, perhaps, very well completed, but the fact that Mr. Clarke was not interested in terms, and the fact that he thought a fair trade-in allowance had been offered him at the conclusion of the demonstration would indicate that his decision on price and value was sufficiently complete to have allowed the closing of the sale if all other things had been equal.

Decision 5, that the Clarkes needed and wanted this car right now was obviously the great omission in Owens' first handling of the situation. And Owens, had he known the five decisions, could have seen the flaw instantly!

Now let's briefly run over the buying motives which Owens stressed, or failed to stress, in the first part of the sale. Probably he touched upon pride of ownership during his presentation. Probably he covered the matter of gain and economy in a fairly thorough manner. The matter of protection and safety he undoubtedly covered pretty thoroughly by bringing out the safety features of the new car and by pointing out the dangers of the Clarkes' old car. The buying motive of comfort and convenience was undoubtedly covered very thoroughly, both on the sales floor and during the demonstration. And, finally, while Owens recounted nothing specific to show that he had aroused the buying motive of satisfaction and affection during the first part of his sale, we can be fairly sure that he touched upon this motive, though he may not have played it up very strongly.

And now, let's see how Owens handled his successful call on Friday evening.

Whether consciously or unconsciously, Owens made an almost perfect presentation that Friday night, and led the Clarkes through the five decisions and the five buying motives just like clockwork. And it was just like clockwork that the sale resulted! Accident? Not a bit of it! Good salesmanship—and salesmanship which, while it was based on the expert use of the five decisions and the five buying motives, never once let it be apparent to the Clarkes that there was any particular plan being employed!

Owens' sales talk on Friday night sounded perfectly natural and perfectly spontaneous. And every sales talk should sound natural and spontaneous. The framework on which you are building your talk—the framework of five decisions and five buying motives—need not, and should not, show through and allow your prospect to see what's behind the scenes.

Owens was an alert salesman. He saw, in the car parked across the street, a "supporting situation," for his sales tactics, and he instantly seized on the advantage and turned it to good account That's real salesmanship.

Note next how Owens played up the cost of repairing their old car. He made it seem almost a matter of necessary economy to buy a new car, rather than pay the repair bills on the old, and at the same time, without directly knocking it, he made the Clarkes dissatisfied with their old car.

Owens' remark to Mr. Clarke that "nothing succeeds like success" drove home once more, from the **business** angle this time, the gain motive, which Mr. Clarke had not perhaps been conscious of feeling up to that moment.

We have already seen the indirect way in which Owens stressed the safety of the new car and at the same time suggested the unreliability of the old car. Owens was going strong—chipping away the Clarkes' reasons for keeping the old car and at the same time constantly building up their reasons for owning a new car.

When Owens came to the matter of enjoyment, he struck such **a** responsive note in Mrs. Clarke that he needed to go no further himself. So he stopped talking. **Like all wise salesmen, he knew when to keep quiet.** He let Mrs. Clarke sell her husband, with a force and vigor and personal application which Owens himself could never have managed.

Very wisely he let Mrs. Clarke herself bring out her husband's desire to satisfy his affection for her. And Clarke saw the point! Notice his remark: "You certainly fell in love with that car, didn't you, dear?"

The result was inevitable! The advantages of the new car outweighed the disadvantages of the old car so greatly that in the end not only did it seem desirable, but also it seemed desirable **now.**

If only Owens had tackled the matter that way in the first place, how much time and effort he could have saved! And how many risks he could have avoided!

But remember this: It was Owens' intelligent application of sound sales principles that enabled him to complete this sale.

(To Be Continued)

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

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Management Today

IN a recent bulletin to his dealers, J. W. Frazer, general sales manager of Chrysler, called attention to certain fundamentals of management that were much neglected in 1928 and 1929, but which are more needed today than ever before. There isn't a dealer in the country who could not benefit by heeding this advice.

Mr. Frazer remarks that "the necessity for keeping capital liquid and productive has been an extensively learned lesson." We might also add that it has been an expensively learned lesson. He then proceeds to point out some failures of the past in boom times, but are suicidal today:

1. Past due notes. The policies of 1929 on rejected finance company risks and side notes to cover down payments have little room in today's operations. The capacity to pay of the type of individual forced to seek such terms, calls for rigid investigation. Adherence to these more stringent rules may mean sacrifice of some of the business that "walks in the door," but it can be compensated for by more vigorous pursuit of sound deals that must be searched for and developed into sales.

2. Past due accounts receivable. For the most part, the service department is the source of "past due accounts." The best policy on service work is cash, and no exceptions. If there is a preferred list, it should definitely be on a month-to-month settlement basis, and the privilege of granting this credit should be reserved to the owner of the business.

3. Advances to salesmen and withdrawals. Withdrawals from a business by its owners must be considered as a possible threat to the entire stability of the business, and weighed carefully. For the same reason advances to salesmen must be given closer scrutiny.

4. Excessive used car inventories. Used car inventories should not be permitted to exceed 40 per cent. of the value of an adequate new car inventory. A used car clean-up, to reduce capital for expansion of new car sales activities on a sound basis, has immeasurably greater profit possibilities than the retention of depreciating used car inventories.

5. Parts inventories. The parts inventory that is out of balance with the volume of business done should be the subject of readjustment. Closer supervision of parts orders may be the need. A drive for expanded service and parts business among owners is even more logical, and may prove more profitable.

6. Inflated nonproductive assets. The listing as assets of land and buildings not used in business, and other investments, at their original purchase price instead of their depreciated value, serves no purpose. When properly entered at their current value, there is the possible merit of a fuller realization of the need for placing the business on a firmer management basis.

We would recommend every dealer in the country to study these suggestions for bringing management in line with the actualities of today. Conditions at the present time make methods that never were good business, but which did get by during the boom, something pretty close to financial suicide.

WELL, there's one thing about this automobile industry, it doesn't know when its licked, and old Bill Roper used to tell his Princeton teams that "a team that won't be licked can't be licked." Our industry fought hard through the worst business quarter this country has suffered in a lifetime. And our industry is getting ready to fight just as hard through the second quarter, the first month of which has not been any too hot. Knute Rockne would have liked an industry like ours, and helped it to fight through to prosperity.

In This Corner....

Opinions, suggestions, complaints, criticisms, grievances or what have you. Open to every one to say anything, anyhow, any time. The communications printed in this department represent the ideas and opinions of our readers. They are not necessarily ours. If you have something to say on any phase of automotive activity, wholesale, retail or abusive, let us hear from you and we will tell the world.

The Thumb in the Dike

Automotive Daily News:

I read with interest a short while ago your report on the plea of the National Automobile Chamber of Commerce against the proposed special tax of automotive sales. This plea was so well set forth that I hesitate to add my humble opinions.

The spring selling season is here, and dealers, salesmen, mechanics and others who have been hanging on during the winter in hopes of better things in the spring are deeply alarmed over the prospect of any additional taxation that might further slow the present slow sales. I firmly believe that the manufacturers have done their full share in offering the public values this year that can scarcely be passed by. All through our organizations we are operating on smaller profits, reduced salaries and in some cases men are working part time on reduced wage scales. Each has accepted his responsibility in keeping the wheels turning. There has been no whining, although many have been forced to adopt lower standards of living than those to which they had become accustomed.

Meanwhile, municipal, county, state and Federal governments have been operating at 1929 levels, and the result is a deficit, and now with the crucial months ahead spellbinders are shouting that we must balance the budget. It seems to me that recent efforts to alleviate our distress have been merely to station a boy at the dike to hold his thumb in the leak. We don't need a thumb in the dike; we need a new dike and a new deal.

If it was so important to Europe to extend to the governments there a moratorium on their debts for one year, why not extend the same moratorium to the people of the United States? Why not cut the present cost of government to levels commensurate with the present reduction in incomes, borrow the required moneys to meet our present deficit and pay them back at a time when, perhaps, we will be better able to pay than we are now and save the people an extra burden of taxes now when they are least able to pay them? If we must pay for our folly, why not pay at a time when we are better able to do so? Of course, in the days gone by there were wealthy men in this country who were public-spirited enough to come to their country's aid. Washington, one of the wealthiest at the time of the Revolution, gave his time, efforts and part of his money. Today there is accumulated wealth enough in this country to subscribe the Federal deficit without difficulty. There are families which could subscribe it alone, and this could be done without charging the government a cent of interest. But that is sentimental.

Two and a half billion dollars have been appropriated to aid bankers, and let some one try to get some help from them. Two billion dollars are being considered as an aid to veterans. While I think the plan is sound and offers a means of getting some money to the people, in spite of the bankers, there seems to be little chance of its success. Strangely enough, the bankers were largely to blame for our over-inflation, and they are now largely to blame for our over-deflation. Much of the dignity which attaches itself to the banking profession in the past has vanished; rather, they have degenerated int money lenders holding out for their pound of flesh. Bankers were the chief opponents of the proposed Home Finance Corporation, which has strangely vanished; they are the opponents of the bonus; they are the loudest shouters for a balanced budget, even at the cost of productive industry. Why not give greater powers to the Federal Reserve Bank so that it can really accomplish something toward getting money back into circulation?

Certainly we should not pop another tax on any industry, or the nation as a whole, at this time. Let's ask the deficit to wait a year or two.

J. M. F., Syracuse, N. Y.

Cut Down on Models

Automotive Daily News: A few days ago I noticed in your paper that the sales managers of the various automobile manufacturers are at last going to pay some attention to the growing problem of too many car models. I really think this is a very constructive activity, and should be given the support of your paper and other papers catering to the automotive industry.

Of course, any change in this direction should not be made on snap judgment. There are many factors that enter into car selling, and among them is a certain amount of finickiness on the part of buyers in regard to certain body types, and so forth. The average dealer today is faced with the fact that he must have the type of car his client demands, and if the client has to wait for delivery, the dealer may lose a sale. On the other hand, the dealer today is faced with the problem of cutting down his overhead and operating expense. Much of his expense today can be traced to inactive dollars tied up in stocks of new and used cars. When a dealer is forced to tie up a lot of capital in stock, his costs naturally mount, and his losses increase in liquidation.

One of the great troubles today is that bankers are loath to extend "dear money" to dealers now, with a possible prospect of collecting in "cheap money" a year from today. The country is largely suffering from a false shortage of cash with which to buy our products. First this was called a buyers' strike, but my experience with prospects visiting my showrooms today leads me to believe that this term can no longer be applied. Whatever the cause may be, it is apparent today that the makers and sellers of goods, including automobiles, have lost control of their markets. The buyers and suppliers of credit are in the saddle, and personally I cannot see where we can look for much improvement until they have been unhorsed. I think the time has come when the makers and sellers of cars must regain control of what

(Continued on Page 11)

Trade Association News

Syracuse Truck Dealers' Assn. Has Active Session

Motor truck dealers in Syracuse, N. Y., now have their own association, which is taking an active part in trade and civic affairs.

The Syracuse Motor Truck Dealers' Association was formed in January of this year. Robert J. Purcell of the Brockway Motor Truck Corporation was elected president, John Barzee of the Barzee Equipment Company, vice-president, and C. H. Hayes, secretary-treasurer. The directors are E. B. Maloney, International Harvester Company of America; F. B. Clough of S. F. Clough & Son; T. F. Brothers, Truck Equipment Corporation, and G. M. Wilkins of the White Company. Other members include Forsythe & Gale, Inc., A. W. Chapin, Inc., Bresee Chevrolet Company, the Heil Company, Niagara Body Company, Van Denburg Company, Inc., Le Roy Casper, Inc., Martlew's Motor Corp., Day Motor Company, Maccar-Weir Company, Rusterholtz & Rossell, Inc., Sanford Motor Truck Company and M. J. O'Hara & Sons.

The Truck Dealers' Association is affiliated with the Syracuse Automobile Dealers' Association, whose offices are in Hotel Syracuse.

The truck dealers took a most prominent part in opposing legislation at Albany during the past legislative session that was thought dangerous to the industry.

The association members meet every Monday noon at Hotel Syracuse. At the last meeting a resolution was adopted at the request of the State Road Contractors' Association asking Gov. Roosevelt to call a special session of the Legislature, and requested that the governor reinstate the $20,000,000 cut from the highway fund.

Topeka Dealers Find Business Dull; New Car Sales Hold Up

The Topeka Motor Car Dealers' Association reports trade as decidedly poor, but with the demand for new cars holding up better than the market for used vehicles.

John R. Johnson, a member of the association, who has been in the automobile business in Topeka for more than twenty-five years and formerly handled the Oakland and Velie and later the Auburn lines, has taken the Willys-Overland franchise.

The Hogue Motor Company is closing up its business, with no successor for the Topeka territory announced.

COMING EVENTS

APRIL

23-May 2—**Zagreb, Jugo-Slavia.** Automobile Salon.

MAY

1- 8—**Penzan, Poland.** International Fair.
2- 6—**Philadelphia, Pa.** American Society of Mechanical Engineers management division meeting.
4- 6—**Honolulu, Hawaii.** National Foreign Trade Council.
4- 7—**Dublin, Ireland.** Commercial Car Show.
7-11—**Cleveland, O.** American Society for Testing Materials, meeting.
7-16—**Budapest, Hungary.** International Fair.
12-13—**Cleveland, O.** American Gear Manufacturers' Association, meeting.
14-15—**Atlantic City, N. J.** Annual convention New Jersey Automotive Trade Association. Hotel Jefferson.
16-20—**San Francisco, Cal.** United States Chamber of Commerce, annual meeting.
19-20—**Chicago, Ill.** National Battery Manufacturers Association meeting. Hotel Sherman.
23-28—**Chicago, Ill.** Radio Manufacturers Association, meeting. Hotel Sherman.

JUNE

Bordeaux, France. Automobile Show.
Cork, Ireland, Commercial Car Show.
Paris, France.—International Automobile Manufacturers Association, sixth annual Motor Transport Congress.
1- 3—**Tulsa, Okla.** American Petroleum Institute, mid-year meeting, Mayo Hotel.
8-11—**State College, Pa.** American Society of Mechanical Engineers, National Oil and Gas Meeting.
12-17—**White Sulphur Springs, W. Va.** Society of Automotive Engineers, summer meeting.
20-24—**Atlantic City, N. J.** American Society for Testing Materials, annual meeting, Chalfonte-Haddon Hall.

JULY

3—**France.** Grand Prix Automobile Race.
5- 9—**Southampton, England.** Commercial Car Show.
9-10—**Belgium.** Grand Prix Automobile Race.
17—**Germany.** Grand Prix Automobile Race.
20-22—**Llandrindod, Wales.** Commercial Car Show.

OCTOBER

3- 7—**Washington, D. C.** National Safety Council, meeting.
3- 7—**Buffalo, N. Y.** National Metal Exposition, 174th Regiment Armory. W. H. Eisenman, 7016 Euclid Ave., Cleveland, director.
3- 7—**Buffalo, N. Y.** National Metal Congress. Sponsored by American Society for Steel Treating, with cooperation of American Society of Mechanical Engineers, Institute of Metals and Iron and Steel Divisions of American Institute of Mining and Metallurgical Engineers, American Welding Society, Wire Association.
13-22—**London, England.** Olympia Show.

M. E. M. A. Group Activities Make Excellent Progress

Favorable progress in the M. E. M. A. group activities program is reported. Five groups already are under way or are in the process of development. These groups include sales and advertising managers, chemical manufacturers, shop equipment manufacturers, service tools manufacturers and replacement parts manufacturers.

Producers of chemical automotive products met at the New York headquarters of the association during March and discussed a program in which all would co-operate in building up sales of their products. The first step in this program will be the preparation and release of a series of newspaper articles suggesting the uses of chemical products to car owners. It is expected that later on this program can be included in radio publicity.

C. E. Anderson of the National Carbon Company was named group chairman, and other members of his committee are G. W. Sherin of E. I. du Pont de Nemours & Co. and N. S. Dahl of J. T. Stanley Company.

The first of the newspaper stories already has been issued, and deals with the need of rust preventive materials in the cooling systems of modern cars.

H. D. Wexelberg, advertising manager for Van Cleef Brothers, Chicago, has been in touch with sales and advertising managers of member manufacturers in the Chicago area to lay plans for the formation of the sales and advertising managers group. These executives have been asked to submit suggestions on activities which can be developed by the group.

Among the subjects already mentioned are: Creation of a standardized inquiry form to be sent to prospective accounts, which would help manufacturers verify the jobbing status of such accounts; a standardized association form to be sent to the references furnished by the account; more uniformity in the type of catalogues, catalogue pages and electros supplied to jobbers; creation of methods for capitalizing to a greater extent on the annual trade show; plus the exchange of ideas on many subjects involving the ways and means of securing a greater volume of business.

Mr. Wexelberg points out that sales and advertising managers have many problems in common which are amenable to group solution, just as credit managers now are able to work together to their mutual advantage in the exchange of credit information. Executives interested in the plans of the Chicago group are urged to get in touch with Mr. Wexelberg.

Shop equipment manufacturers and service tools manufacturers have organized into groups which could not rightfully be called M. E. M. A. groups. Shop equipment manufacturers have revived the old Shop Equipment Associates and already have made considerable progress in a program which calls for close co-operation with wholesalers in the merchandising of shop equipment. They are publishing a monthly bulletin which is being issued to a list of 2,200 wholesalers, and two issues of this bulletin already are out. The work has been received with enthusiasm by many of the better jobbers in the country.

This group, however, has been opened to shop equipment manufacturers selling through wholesalers, regardless of their trade association affiliation, and is strictly an independent and informal organization. Because of the existence of Shop Equipment Associates, however, it was felt that there was no need of encouraging a similar group confined strictly to M. E. M. A. members.

A similar condition exists in the case of the service tools manufacturers. These manufacturers have been organized through the efforts of the Dual Service Tools Committee of the M. E. M. A. and the N. S. P. A. and include manufacturers who are members of either or both of the associations. The group has developed an extensive merchandising program which will demonstrate the market for small tools and suggest successful methods of selling tools and expects to announce its program before the end of the month.

AMBULANCE AND PATROL BODIES

The York-Hoover Body Corporation is putting out a series of bulletins describing its new designs in casket, ambulance and patrol bodies. These bodies have a metal exterior surface built on a heavy layer of compressed fabric material with a three-layer plywood backing. This design is employed not only for strength, but to deaden rumble and other sounds.

MASS. TRUCK HEARING WILL BE HELD MAY 2

Boston, Mass., April 29.—The state Department of Public Utilities today set May 2 as the date to hear the petition of the Motor Truck Club of Massachusetts, Inc., protesting against a proposed schedule of rates for pick-up and delivery truck services by the Boston & Maine Railroad.

TESTING MACHINE CATALOGUE

The Tinius Olsen Testing Machine Company, Philadelphia, has just issued a new catalogue 50-Part "H" on miscellaneous testing equipment.

This publication contains 116 pages and is elaborately illustrated. The subject matter embraces testing machines for efficiency of cutting and abrasion tools, oil, grease and bearing metal; machines for testing endurance, fatigue and alternate stress. Another section takes care of machines for testing impact; another torsion, and still another ductility, resilience and flexibility. Section 6 deals with hardness testing machines, strain gauges, extensometers, verifying rings and similar instruments. Color, bend, shear, traction and compression dynamometers, molded insulation and miscellaneous testing machines come in for treatment in section 7. The final section is given up to various testing and balancing machines described in other Olsen catalogues.

This Olsen catalogue is handsomely gotten up, on excellent paper, and the illustrations deserve more than passing mention.

NEW ONE-STOP STATION FOR SPRINGFIELD, MASS.

Springfield, Mass., April 29.—Frank Ferrara & Sons, who have operated one of the largest spring servicing stations in New England at 738 and 740 Worthington St., for a number of years, have further enlarged their plant and have opened a new department that will include tires, battery, brake, complete lubrication, headlight and washing service as well as the sale of greases, oils and gasoline. The new department is in charge of Albert Viola, formerly with the Safety Service Corporation.

N. J. PLANS TO ELIMINATE STOP STREETS IN TOWNS

Trenton, N. J., April 29.—With but few exceptions, New Jersey will be without "stop streets" in the future as the result of an order for their elimination by the State Highway Commission. The commission passed the order yesterday and made it effective today. The exceptions are those newly approved by the Traffic Commission and those in larger municipalities with congested districts. Resolutions continuing state routes as "through streets" were also adopted and stop street signs will be continued at intersections on the state roads.

AUTOMATIC SPRAY PAINTING

The DeVilbiss Co., Toledo, O., is putting out a comprehensive line of automatic spraying machines. One of the latest items in this line is a sprayer for generators, which is entirely automatic and does not require an operator.

In this machine the generators pass under a group of DeVilbiss automatic spray guns which spray the finishing material over the parts as needed. Generators are loaded automatically on to an endless chain which carries them through the spray painting compartment. A number of similar automatic sprayers are available for finishing other automotive parts.

BRAGG HEADS AUTOMOTIVE SECTION IN S. A. DRIVE

New York, April 29.—Harry G. Bragg, secretary of the Automobile Merchant's Association, has accepted the chairmanship of the Automotive Industries section of the Trades & Industry Division in the Salvation Army United Appeal for $1,090,000. Mr. Bragg and his committee will cover all branches of the aircraft industry as well as the automobile business.

Ask 'em to buy!

NEVER in the history of the automotive industry has the market for replacement parts been so large as it is today. Never have so many cars needed so much repair work to bring them up to the high standards of enjoyment which manufacturers have taught us to expect.

This situation is readily apparent when it is recalled that one out of every two automobiles on the road today is more than four years old.

Then, too, the fact that the automobile has come to be accepted as a necessity in American life bears with it the will and the desire of the owner to maintain it.

The opportunities for worthwhile and—consequently—profitable service are unparalleled. Now, more than ever before, the motorist will translate a present expenditure for service work into terms of future economy and increased motoring enjoyment.

In view of this entire situation, it's just good common sense to—*ask 'em to buy!*

The Defiance 7-Point Dealer Plan fits ideally into the present automotive repair picture. More than 67,000 dealers are now benefiting by Defiance advanced merchandising and selling methods applied to a product of predetermined quality.

Defiance Spark Plugs, Inc.

TOLEDO, OHIO

District Offices in Principal Cities

Production--Engineering--Factory

THE AUTOMOTIVE DIESEL ENGINE

By MYRON S. HUCKLE,
Instructor Aeronautical Department
Massachusetts Institute of Technology
(Second Installment)

High injection pressures and certain spray patterns to better distribute the fuel throughout the combustion chamber will improve somewhat the percentage of air burned, but high injection pressures give trouble, and high speed and complete combustion are very difficult to obtain.

A closely related type is that one which adds to the single cylindrical chamber a reasonably high rate of turbulence. The orderly motion of the air is obtained by means of tangentially directed intake ports. The German Junkers and the American Duplex of Arlington, Mass., are of this type. This type promises to be one of the most successful automotive engines. It lends itself to two-cycle operation and entirely eliminates the valve gear. The Duplex eliminates the weight and gear trains of the Junkers and should make a place for itself in the forefront of the high-speed Diesel field.

A third type, very little different from the second type, is represented by the Ricardo and Packard, wherein the rotating air is confined to a cylinder of smaller diameter at the top center position. In this manner a higher angular velocity is obtained than in the second type, and, at least in the Ricardo type, better mixing of the air and fuel is obtained.

Both the Junkers and Ricardo types are not usually very practical for a poppet valve engine and either opposed pistons or sleeve valves are required.

The fourth or antechamber type is characterized by a projecting section of the combustion chamber comprising approximately one-quarter to one-third of the clearance volume, and joined to the cylinder proper by a medium-sized orifice. The fuel is usually injected near the orifice, toward the antechamber. This type is represented by the Bosch-Acrol and the pear-shaped chamber developed by the N. A. C. A.

In this type the preponderance of the burning occurs alternately, first in the antechamber and then in the main cylinder, the mixing being accomplished by the movement of the gases at high velocity through the orifice. The mixing is not exceptional and a considerable heat loss occurs in the narrow orifice.

A fifth type, represented by the Deutz and Benz, is the precombustion chamber system. The precombustion chamber is in the form of a cup with the lower end entering the cylinder and embracing approximately one-quarter of the clearance volume. It is connected to the main cylinder by several relatively small orifices. This type may utilize relatively low injection pressures, as the distribution is obtained by the burning of part of the fuel within the chamber. The resultant pressure blows out the remainder at a high velocity. Due to the small size of the openings leading into the precombustion chamber, throttling takes place, and a hot wire is required in the chamber for cold starting. Heat losses at the orifice are considerable. With sufficiently early injection into the precombustion chamber, fairly high engine speed may be used. Early injection results in a sudden rapid burning of the accumulated fuel when the ignition point is finally reached. The resulting knock in the precombustion chamber is not dangerous, but is very disquieting to a layman, or even to a gasoline engine expert.

The fifth main type is that one using a combustion chamber separated from the main cylinder by a relatively large orifice but embracing practically all of the clearance volume. When this type is designed to induce a high rate of turbulence the performance exceeds that of any other type. Another great advantage of this type is the fact that it is practically independent of the type of the injected spray. The exceptional success of this type, and also the Ricardo type, nullifies to a large extent the effort being exerted in developing and studying fuel sprays.

The outstanding requirements of a good combustion system are fulfilled to a greater or lesser extent by this new combustion system.

First a relatively great degree of orderly turbulence must be induced by the moving piston so that the degree of turbulence will increase with the speed of the engine.

The combustion chamber should embody as nearly 100 per cent. of the clearance volume as possible.

This chamber should be separate from the cylinder proper.

No interference should be offered to the utilization of the full cylinder diameter for valves, nor should complicated and unorthodox valve gear be required.

The use of an orthodox flat top piston should be possible.

If practicable, a storage of heat should be provided from one cycle to another in order to heat the air just before injection takes place. This heat storage must not be in a position to reduce the volumetric efficiency of the cylinder, to cause cracking of the injected fuel by impingement on its hot walls, nor to weaken any structural part through an increase of its temperature.

No impingement of injected fuel upon the chamber walls or pistons must be permitted.

Small orifices between the combustion chamber and the cylinder should be avoided.

The injection system need not operate at high pressures, for the

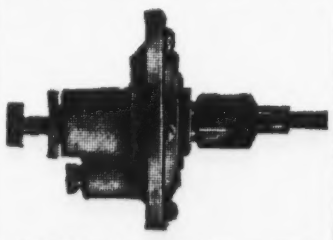
(Continued on Page 9)

Vacuum Reserve for Windshield Wipers

The Trico Products Corporation, Buffalo, N. Y., has just brought out a new Reservac and throttle guard for use in connection with all oscil-

lating types of automatic windshield wipers. The Reservac is a vacuum reservoir which includes a check valve, positive in action, to hold the vacuum for wiper operation. A governor also is included for controlling the stroke of the wiper as well as conserving the vacuum supply.

The Reservac, it is stated, is charged with full power in less than



a second by the operation or movement of the accelerator. The design is to assure continuous operation of the windshield wiper at all times. The Reservac automatically recharges every time the gears are shifted. One model fits all cars and installation is said to be simple.

NITRALLOY ROTARY PUMPS

The Northern Pump Company, Minneapolis, Minn., is putting out a new XE series of nitralloy rotary pumps, using the same laminated construction employed in the two smaller series XA and XD.

Nitralloy pumps may now be had in capacities from ¼ to 42 gallons per minute at 1,200 r. p. m. The range of this new series is from 14 to 42 gallons per minute at 1,200 r. p. m.

Nitralloy is used to make the pump available for all types of oil service, including the handling of dirty crude oils and sitrillates under pressure. For non-lubricating oils the XE series is equipped with nitralloy plate bearings. The pump body is of solid steel with integal nitralloy plate bearings. The cylinder itself is also nitralloy, as are shafts and gears.

The pump is held together by four steel dowels and the standard stuffing box may be replaced by double depth boxes or other types if desired. Helical gears may be had for the pumps.

NEW FLEET OIL RECLAIMER

The Youngstown Steel Car Corporation, Youngstown, O., is placing on the market a new small model of its oil reclaimer. This reclaimer is of two gallon size, requiring two hours per reclamation. Two gallons of drainings are poured into the tank and the switch is turned on. This switch controls the heating units, agitates the paddles and induction fan.

In approximately one hour and forty-five minutes the signal lamp will indicate that the oil has reached the proper temperature and a thermostat automatically cuts out the heaters to prevent overheating. The movement of a lever then starts a pump which forces the oil through a filter press, completely removing all carbon, sludge and metal particles. Color is restored to the oil as well as the other properties of the original, it is claimed, at a very low cost per gallon.

This small size reclaimer is recommended for use by small fleet owners, as well as service stations.

DIE SETS AND SHOES

Danly Machine Specialties, Inc., Chicago, Ill., is announcing a new line of low-priced standardized die sets and shoes. This line does not supplant the company's precision line, which it supplements.

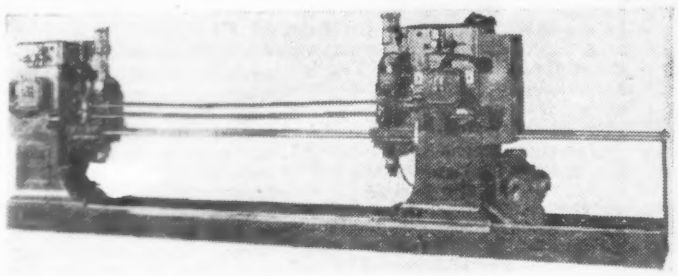
These sets are designed to handle economically requirements of from 300 to 300,000 pieces. This is designed to give tool rooms and tool shops a line of units to meet present day reduced production rates. Shoes and sizes are identical with those of the Danly precision die sets, the change being only in guide posts and bushings.

Guide posts are of hardened manganese steel and bushings are of a special nickel alloy to prevent binding and to reduce wear to the minimum. Parts for these sets are stocked at the five Danly factories, each set being built up to order from standard parts. These sets may be converted into precision sets by changing pins and bushings.

PUSH AND PULL JACKS

Templeton, Kenly & Co., Chicago, Ill., are offering a new Simplex push and pull jack, known as the No. 710. This device is designed for use in garages in straightening frames, fenders, bodies and light axles. It can be employed in removing and installing spring leaves, pulling off wheels, lining universal joints to the transmission and in many other repair jobs on cars, trucks, buses and trailers. The company also puts out sky hooks for use with the push and pull jacks. These are made of chrome nickel steel.

Direct Controlled Heating



The Thompson-Gibb Electric Welding Company, Bay City, Mich., is producing a special application of direct-controlled heating by electric resistance method which was developed for rapid soldering of parts, consisting of from three to twelve copper tubes, on which are assembled a large number of flanged fins, each of which must be thoroughly soldered to each tube for good thermal contact. The tubes are covered with solder, the fins assembled, soldering acid applied, the complete unit clamped in machine, current turned on, and in less than a minute or more, depending on number of tubes and their length, the entire assembly is thoroughly soldered.

One machine is fixed on base and the other is adjustable along base through distance of ten feet by means of motor-driven worm-reduction unit, spar gears and rack, motor having reversible drum control. Adjustable time relays are provided to give definite time of heating work.

Clamping of work is by means of air cylinders, and all work clamping jaws are adjustable, and special provision is made for uniform clamping pressure and distribution of current to all tubes to insure uniform heating.

Each machine of the duplex unit carries its own transformer, one side of each secondary being connected to heavy bus bars, the work being heated forming the other side of secondaries.

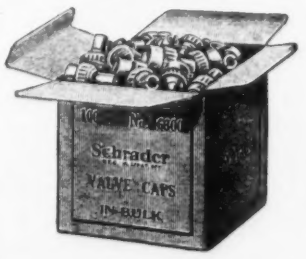
This method of direct-controlled heating by electrical resistance has applications to many similar classes of work besides soldering, such as heating for annealing, heat treating, heating for forging, bending, etc.

NEW CUTTING AND WELDING TORCH

Tips, Inc., Baltimore, Md., is marketing a type NVM cutting and welding torch, which is designed to cut or weld any normal thicknesses of metal within the range of the process. The torch is got ready for welding by changing the tip.

Valves and the base of the torch are of forged bronze. Tubes are triangularly arranged to give increased transverse strength. The high pressure valve is operated with a lever underneath the torch. Replacements are made without disassembling the torch, all important parts being accessible from the outside. The 90 degree head torch is designed to take the standard type NV conical seated tips.

SCHRADER VALVE CAPS IN BULK



Vulcanizing and repair shops will be interested to know of the new medium weight Schrader Valve Cap (No. 6,300). Built particularly for service work, the cap is bulk packed both in 100 and 250 lots. It carries the Schrader guarantee that it will be airtight up to 250 pounds pressure.

NEW BENCH GRINDER

The Sunlight Electric Manufacturing Company, Warren, O., is placing on the market a new ball bearing bench grinder, equipped with a flange guard. This guard can be removed for buffing and polishing instead of grinding. The motor is a split phase AC type starting with less than 15 amperes of current. Two sizes of grinders may be had, the 1-3 horse power, 1,750 r. p. m. and the ½ horse power 3,600 r. p. m., both equipped with an eight inch ball bearing motor.

Tool rests with this grinder are adjustable in all directions. A toggle switch is placed in the base.

Improved Loadmaster Crane Unit With Choice of Power

Announcement has just been made that the Loadmaster manufactured by Bucyrus-Erie Company of South Milwaukee will now be available with either Case or McCormick-Deering power, and that the capacity of this crane has been further increased to 4,500 pounds.

This Loadmaster, with its increased capacity, has a wide variety of uses, the makers state. It can be used as a stationary revolving-boom crane, as a crane traveling with its load, or as a tractor. Its mobility, compact design, and the many items of special equipment available make it extremely handy for both indoor and outdoor work.

It lifts and swings or carries loads to points where needed. It will load and unload trucks and cars; sort and pile stored materials; lift rock, pipe and transformers from and into manholes and trenches; serve machine tools; assist in overhauling and repair work. It is furnished with either wheel or crawler mounting.

A new pictorial bulletin has just been issued by Bucyrus-Erie Company describing and illustrating many uses of the Loadmaster, handy utility crane. Any of our readers interested in material handling problems may obtain a copy by addressing manufacturers.

WEDFORD SEAT COVERS

The Wedford-Shuford Company, St. Louis, Mo., has just added two new items to its line in the Wedford Panama combination seat covers and the Wickertex combination seat covers. These products are described as being a combination of special woven fiber with cloth seat cover fabric. The woven material covers the length and width of the seat and extends down over the front of the cushion to give additional comfort and service.

DUMPING PICKLING BASKET

The Weavers Brothers Company, Cleveland, O., is putting out a new pickling basket, which is designed to carry the smallest forgings, be strong enough for maximum loads and allow ample circulation for the pickling solution. The basket can be dumped in a moment. It is made in three standard sizes, 30x22x24, 36x28x24 and 42x34x24. It is made of Alliance acid resisting bronze and can be built of Monel metal at slightly higher cost.

Aren't these Car Owners worth Converting?

Readers of the New York Evening Graphic are buyers of automobiles! This is attested to by the fact that the Evening Graphic carries more used car display advertising than all New York morning and Sunday newspapers combined. As a matter of record, the Evening Graphic, during 1931, carried 30% of all display used car advertising placed in New York newspapers. One hundred and seventeen dealers placed 22,826 individual used car display advertisements during the year. Sales had to result to justify this expenditure! Automobile dealers will not continue to pour out money if their advertising is non-productive.

If readers of the Evening Graphic will buy used cars—won't they likewise buy new cars, if the proper appeal is made? We think so! For example, in one issue the Evening Graphic carried used car display advertisements listing 377 cars at a total retail sale price value of $139,000. Thirty-six different makes of cars were offered at prices ranging up to $1,625.

Here, then, is a ready-made "motor-conscious" audience, ready to be converted to the "new car" appeal. Manufacturers of cars in the medium and low-priced class should bear this in mind in planning their New York advertising—particularly now when they seek new avenues to sales—and demand a bigger performance from their advertising dollars.

EVENING GRAPHIC

New York's Only Evening Tabloid Paper

350 Hudson St. New York City

HOW MUCH POWER CAN AN ENGINE PRODUCE?

By EARL BARTHOLOMEW
Director Electrical Laboratory
And Homer H. Dido, Ethyl Gasoline Corporation
In a paper read before Chicago section S. A. E.

Inasmuch as you and I have developed a desire and, consequently, a capacity not only to utilize but also to design, build and test internal combustion engines, we oftentimes ask ourselves and others "How can the gasoline engine be improved?" or we may even go the limit and ask ourselves "How much power can an automobile engine produce?"

Several answers to these questions are available and they come from two general sources, namely: Theoretical considerations and practical considerations. Considerable differences in these answers prevail. Power, then, is the chief factor which differentiates the modern automobile from the older cars and the horse and buggy. In a general analysis it seems safe to state that operating conditions, design factors, materials and combustible substances are the determining factors which quickly classify those energy converters in superior intermediate, or horse and buggy, classes.

Before we answer the question in regard to the maximum power of the automobile engine, let us make an analysis of the following questions and considerations.

1. How much power should a car have?
2. How can the extra power be obtained?
3. What difficulties are to be encountered in the attempts to improve the Otto cycle engine?

In the first question, "How much power should a car have?" it is thought the truck may have one horse power for 600 pounds. This amount of power is capable of accelerating the truck rapidly enough to accommodate the present average commercial needs and propel the truck at permissible and desirable speeds along the highway. In the car, one horse power for thirty-five pounds is a fair figure. Of course, cars should run on one horse power per 600 pounds, but the public demands car performances which can be obtained only through more power. There is no limit yet apparent in these demands and the degree to which they may be fulfilled by improving the power characteristics of the automobile engine.

"How can extra power be obtained?" Various methods may be pursued, namely:

1. Increased cylinder dimensions.
2. Increased number of cylinders.
3. Increased speed.
4. Increased manifold pressure by supercharging.
5. Improved engine efficiency.

Each of these methods has its advantages and disadvantages and in those cases where disadvantages prevent an economic balance of the engine, one general statement can be made which analyzes the situation most completely—that is, these difficulties are always present, always handled and yet nearly always ignored.

Increased Cylinder Dimensions

A decided increase in fuel consumption accompanies increases in displacement of the cylinder. It naturally follows that more energy will bt liberated in the cylinder, which, in turn, means that more heat must be removed by the cooling medium. This fact complicates radiator problems in those cases where the space available for radiators is being utilized to the fullest extent.

Increasing piston diameters make it necessary to design pistons with greater clearances to accommodate the increases in piston diameter due to expansion of the metal caused by high operating temperatures. With the greater clearances, there exists a greater tendency toward gas leakage, increased oil consumption and piston slap, and cooling of the piston and valves becomes more difficult. The heat absorbing surface of the piston is proportional to the square of the piston diameter, while the heat dissipating surface is nearly proportional to the diameter to the first power. Thus, with a given temperature at the piston's circumference, the center of the piston becomes hotter as the diameter of the piston is increased. (This fact makes the cooling of the piston a complicated problem when piston diameters are increased.) Valves are subjected to greater temperature stresses, due to larger quantities of heat, which must pass through the ports. Increasing the size of the valve is not a solution for the heat problem, and if it were, the added problems due to increased valve weights would give the designer additional food for thought. Sufficient clearances and noise, or insufficient clearances and less noise, valve seating at higher speeds, and lubrication, are the chief problems which are to some degree proportional to valve size.

Additional mechanical problems which accompany increases in cylinder dimensions are:

1. Inertia.
2. Lubrication.
3. Space considerations.
4. Weight.

Inertia forces increas with increase in the weight of the reciprocating and rotating masses. Lubrication of larger areas of metallic surfaces influence the success to be attained with a lubrication system. Larger areas coupled with larger quantities of heat impose additional burdens on all three of the fundamental functions of a lubricant, that is, reducing friction to a minimum, removing heat from the point of generation to the point of dissipation, and maintaining piston seal.

With material increases in bore and stroke, motor space considerations become significant. Then additional weight of motor and car structure influences the desired performance characteristics of the automobile. Acceleration is directly proportional to the effective accelerating force transmitted to the driving wheels and inversely proportional to the mass of the car. In order to improve the accelerating ability of the automobile, the accelerating force must increase in greater proportion than the weight of the car. In some cars, it has been learned that the accelerating performance of the car has actually been reduced because in providing increased power by increasing engine displacement, it was necessary to increase the engine and car weight by an amount proportionally greater than the increase in power.

It has also been quite definitely proved that to increase the diameter of the cylinder it is necessary to decrease the compression ratio for a given fuel. Lowering the compression ratio reduces the thermal efficiency, and again the expected advantage to be derived by increasing cylinder dimensions may not be realized at all. Thorough and skillful consideration of the foregoing factors must be made if improvements in the internal combustion engine are to be realized by increasing the cylinder dimensions. The present tendency to increase the number of cylinders instead of increasing the size of a smaller number of cylinders indicates the understanding of this design problem by automotive engineers.

Apparently the limiting cylinder size has also been reached in the design of aircraft engines, since in many cases further increases in bore and stroke result in no addtiional power output. The demand for greater power output from a single aircraft engine will therefore require an even greater multiplicity of cylinders.

Increasing the displacement by

(Continued on Page 10)

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

CUMULATIVE NEW PASSENGER CAR

Figures in this table are from R. L. Polk & Co. of Detroit, with the exception of Illinois, which are supplied by the Robinson Advertising Service, Springfield, Ill., and New York city, are included in the New York state total. Some of this data has been published previously, but it is given here complete for the convenience of

In this table 44 states and the District of Columbia

Returns for today: Alabama, Arizona, California, Iowa, Kentucky, Louisiana, Maine

States	AUBURN GROUP			CHRYSLER GROUP					FORD GROUP			GENERAL MOTORS GROUP						
	Auburn	Cord	Totals	Chrysler	De Soto	Dodge	Plymouth	Totals	Ford	Lincoln	Totals	Buick	Cadillac	Chevrolet	La Salle	Oldsmobile	Pontiac	Totals
Alabama	3		3	14	6	7	34	61	87	1	88	18	2	236	1	4	16	277
Arizona				2	2	9	13	26	12	1	13	17	4	73		5	8	107
Arkansas	2		2	9	5	14	10	38	78	1	79	15		154		1	13	183
California	138	3	141	335	349	316	524	1524	588	62	650	545	96	1528	54	145	231	2599
Connecticut	15		15	56	68	59	132	315	73	4	77	165	26	450	15	58	127	841
Delaware	1		1	12	2	4	7	25	23	1	24	41	6	111	2	10	27	197
Florida	21		21	44	29	23	115	211	193	3	196	56	10	370	6	8	46	496
Idaho	5		5	4	3	4	16	27	42		42	15		82		2	6	105
Illinois	73	2	75	269	276	220	289	1054	296	22	318	294	102	1566	44	231	339	2576
Indiana	41	2	43	74	207	96	163	540	336	9	345	105	11	889	6	92	118	1221
Iowa	15		15	27	38	67	85	217	161		161	51	4	558	1	48	90	752
Kentucky	13		13	45	24	53	82	204	112	1	113	41	4	343		14	36	438
Louisiana	13		13	19	15	32	34	100	67	1	68	34	6	279	1	18	20	358
Maine	4		4	20	4	36	54	114	87	2	89	52	5	242	7	38	78	422
Maryland	21		21	52	35	45	81	213	67	2	69	73	11	695	10	21	98	908
Massachusetts	47	1	48	158	92	143	229	622	224	16	240	403	40	1290	33	202	351	2319
Michigan	29		29	185	220	154	177	736	175	27	202	296	74	1108	20	234	226	1958
Minnesota	21		21	103	46	74	144	367	226	7	233	125	12	955	8	107	171	1378
Mississippi				3	3	10	19	35	23		23	9		197		3	3	212
Missouri	57	2	59	134	257	222	508	1121	913	14	927	237	17	2798	16	200	332	3600
Montana	6	1	7	14	11	14	51	90	134		134	41	1	250		13	56	361
Nebraska	6		6	23	8	18	51	100	227	2	229	37	4	352	1	21	46	461
Nevada				9	3	4	8	24	11	1	12	17	3	54	2	3	3	82
New Hampshire	8		8	15	12	12	27	66	47	2	49	41	1	150	1	24	35	252
New Jersey	38	2	40	198	132	116	210	656	198	18	216	395	62	1135	28	166	250	2036
New Mexico				3	1	1	7	12	16		16	6		45	1	1	3	56
New York	158	18	176	571	509	381	639	2100	485	91	576	1282	299	3276	74	563	640	6134
North Carolina	12		12	37	11	28	75	151	77	2	79	31	3	356	7	18	30	445
North Dakota	2		2	4		5	14	23	34		34	19		141		4	7	171
Ohio	63	1	64	190	555	178	361	1284	300	14	314	262	55	1288	26	171	244	2046
Oklahoma	3		3	31	34	42	39	146	118	3	121	56	6	483	1	6	47	599
Oregon	2		2	28	27	18	42	115	65	2	67	32	4	153	2	7	19	217
Pennsylvania	82	6	88	420	332	331	467	1550	531	16	547	595	67	2423	41	250	468	3844
Rhode Island	10		10	41	63	36	78	218	32	2	34	55	8	203	8	18	56	348
South Carolina	5		5	7	13	19	18	57	41	1	42	11		208	1	4	16	240
South Dakota				7	8	19	32	66	93		93	16		118	1	23	14	172
Tennessee	9		9	17	17	44	39	117	51	1	52	20	5	237	4	11	15	292
Texas	28		28	106	75	94	132	407	382	4	386	208	17	1422	6	26	109	1788
Utah	5		5	5	7	15	19	46	43		43	18	1	124		15	19	177
Vermont	6		6	4	4	11	19	38	20	2	22	25		79	2	16	27	149
Virginia	9	2	11	41	53	51	64	209	170	2	172	61	7	668	1	10	77	824
Washington	14		14	50	36	43	94	223	194	3	197	90	4	275	4	30	47	450
West Virginia	4	1	5	28	16	33	46	123	69		69	20	4	251	1	18	39	333
Wisconsin	38		38	63	80	81	114	338	239	1	240	198	27	834	10	76	157	1302
Dist. of Columbia	36	1	37	41	40	42	51	174	48	8	56	68	8	414	2	43	68	603
Line Total	1063	42		3518	3728	3224	5413		7408	349		6196	1016	28863	448	2978	4828	
Group Total			1105					15883			7757							44329

THE AUTOMOTIVE DIESEL ENGINE

(Continued from Page 6)

spray is no longer depended upon to reach all of the air.

The advantages of this system are apparent.

Turbulence of the air is utilized to bring practically all of the air into contact with the fuel particles. As the rate of turbulence increases with engine speed the combustion processes are accelerated to correspond. In fact, only at reasonably high engine speeds will a sufficient turbulence be induced to provide the best combustion conditions. Turbulence or orderly rotation of the air also provides a density differential in the combustion chamber which causes injected fuel to move toward the vortex of the swirl. The fuel is in this way kept away from the chamber walls, where it would cool, fail to burn, crack or run into the crank case.

If the combustion chamber can embody 100 per cent. of the clearance volume, practically all of the oxygen is brought into contact with the fuel, and nearly all of the burning takes place in the combustion chamber.

If the combustion chamber is separated from the cylinder proper, very little combustion takes place in contact with the relatively large areas of the piston and cylinder. Large heat losses are avoided and very little flame is brought into contact with the lubricated faces of the piston, rings and cylinder. Raw fuel is never deposited upon these parts with the resultant evils mentioned above.

In order to provide a high volumetric efficiency, the exhaust, and especially the intake valves, should be as large as possible, and have ample lift. A high M. E. P. at high speed requires ample valve areas.

If a flat top piston can be used it will be lighter, will absorb less heat and will be cheaper than any other shape.

If the heating of the fresh air occurs only after it is trapped within the cylinder a high volumetric efficiency will be retained while the ignition lag with its attendant knocking will be reduced and relatively complete controlled combustion will be obtained.

Impingement of liquid fuel on the combustion chamber walls will result in cracking of the fuel, for the temperature of the walls is always above the cracking temperature of the fuel. If the fuel is cracked the light products are burned and the heavy cokes and carbons deposited or blown out as smoke. Occasional designs provide a heating shell within the combustion chamber which will run sufficiently hot to burn the cokes and carbons, but the burning is necessarily slow and occurs too late in the cycle to provide much power. It is best to avoid the impingement in the first place.

It is apparent that many of the troubles of the Diesel which originate in poor combustion conditions will largely disappear along with the high fuel consumption and low M. E. P. when this type of combustion system is used.

For several years there has been an effort made by certain research men to develop this type of combustion system. In 1929 such a system was designed and built at M. I. T.

Prof. Huckle next considers the possibilities of the Diesel as applied to airplane, marine and stationary service, and then has the following to say about its advantages as an automotive highway vehicle power plant:

Quoting from the January, 1931, Quarterly of the National Fire Protection Association, "The tremendous increase in bus transportation during the past few years in all sections of the United States and Canada carries with it the possibility of a major catastrophe from a loss of life or injury standpoint. An accident to a pleasure car or even a motor truck may involve the driver and possibly three or four others, but an accident to a motor bus may endanger from thirty to fifty persons. . . . The fire records of the N. F. P. A. contain records of twenty fires which have occurred since 1924. These obviously represent but a small fraction of such fires that have occurred in this period, but at the same time they are sufficiently varied to indicate the hazards of bus operation, from a fire standpoint, and throw considerable light on the possibilities for serious loss of life and injury." Seven of the seventeen fires, described in detail, were primarily gasoline fires, and as many as six persons were burned to death in one accident.

Although there is no immediate prospect of the Diesel superseding the gasoline engine in the passenger automobile, it is significant that in a list of thirty-nine loss of life fires listed by the N. F. P. A. in the January, 1931, Quarterly, seventeen of them included trucks or buses, or 43½ per cent.

The following table, reprinted from the same Quarterly, gives an inkling of the extreme danger accompanying the use of gasoline as a vehicle fuel.

"Loss of Life in Automobile Fires"

The table which follows summarizes the loss of life in automobile fires as compiled by the N. F. P. A. department of fire record. The fires included in this record have, for the most part, occurred during the past three or four years and represent but a small number of such fires, which, unfortunately, are occurring daily throughout the country. This table, as in previous fire records, indicates the cause of loss of life or injury, rather than the cause of the fire.

Causes of Loss of Life and Injuries in Automobile Fires

(Fatalities classified according to the immediate cause of the loss of life rather than according to the cause of the fire.)

	Pleasure Car or Truck			Motor Bus	
	No. Fires	Deaths	Injuries	Deaths	Injuries
Pinned in car after collision and burned	58	108	36	8	6
Trapped in burning bus or car	7	3	0	4	56
Clothing ignited while filling tank	7	6	2	0	0
Clothing ignited while using lighted match, cigarette or lantern in vicinity of tank	9	8	4	0	0
Spectator burned from automobile fire	2	2	27	0	0
Miscellaneous known causes	8	5	11	7	0
Unknown causes	3	3	0	0	0
Total	94	135	80	19	62

Because of the great demand for automobiles, trucks and buses, their production has multiplied many fold without thought of the dangers, nor serious effort to reduce them.

In England, the London Omnibus Company demanded Diesel power plants for its buses. As none of the Diesel engines then available were quite suitable, a subsidiary (the Associated Equipment Company) was formed to build them.

If public opinion was aroused the use of Diesels in buses and trucks would become compulsory.

Fleets of trucks or buses are in a position to begin operation with Diesel power at once because they can buy their fuel on contract in large quantities. One bus company in New Jersey could save $1,000,000 a year on its fuel bill. This should be sufficient to overcome any added expense accruing from the introduction of the new type of power plant in its development stage. Any saving resulting from the safety features would pay dividends and the public would have better protection from fire.

The relative value of gasoline and Diesel truck engines as regards performance has been carefully studied in Germany and well reported in the the paper entitled,

REGISTRATION STATISTICS, MARCH, 1932

New Jersey, which are furnished by the New Jersey Motor List Co., New Car Division, Trenton, N. J. Metropolitan district figures, compiled by Sherlock & Arnold, our subscribers. Readers desiring county, city, or town lists, or lists of owners in any given section may obtain these by addressing any of these three companies

Mississippi, Nevada, New Jersey, New Mexico, New York, Tennessee and Texas **Comparative figures for March, 1931, will be found on Pages 10 and 11**

States	HUDSON GROUP			STUDEBAKER GROUP				WILLYS-OV'D Gr'p			NON-AFFILIATED MANUFACTURERS									State Totals
	Essex	Hudson	Totals	Pierce-Arrow	Rockne	Studebaker	Totals	Willys-Overland	Willys-Knight	Totals	De Vaux	Franklin	Graham	Hupmobile	Marmon	Nash	Packard	Reo	Miscellaneous	
Alabama	2		2		6	4	10	12	1	13				2		10	3	2		471
Arizona	2	5	7		5	14	19	3		3						9	2	1		187
Arkansas						3	3	1		1			8	2		7	1			324
California	116	89	205	33	131	373	537	87	36	123	23	4	185	93	6	243	112	22	74	6,,541
Connecticut	72	22	94	8	14	62	84	40	5	45		7	41	22	2	57	35	9	1	1,645
Delaware	6	1	7	2	3	4	9	10		10		1	1	4		11	6		5	301
Florida	33	18	51	2	7	15	24	16	2	18		4	35	9	9	4	6	3	9	1,096
Idaho	2	4	6		1	2	3	5	1	6	1		6	1		11			3	216
Illinois	139	70	209	13	48	245	306	204	28	232	14	14	146	103	18	188	80	18	25	5,376
Indiana	80	32	112	3	21	72	96	113	4	117	8	3	42	26	17	40	13	5	10	2,638
Iowa	43	23	66	1	11	27	39	57	7	64	5		10	7	1	31	12	1	6	1,387
Kentucky	32	10	42	1	16	28	45	38	6	44		1	4	12	4	16	10	3	2	951
Louisiana	3	2	5		16	7	23	11	1	12			10	3	1	42	6		2	643
Maine	38	13	51	2	5	37	44	15	5	20	1	1	17	1		33	10	5		812
Maryland	54	20	74	7	16	31	54	33	4	37		7	21	16		44	24	6	5	1,499
Massachusetts	235	104	339	28	51	156	235	60	22	82		15	68	54	5	198	83	22	6	4,336
Michigan	232	118	350	10	44	115	169	60	12	72	4	1	121	486	9	47	74	35	25	4,318
Minnesota	47	37	84		19	97	116	84	6	90	1		42	34		55	18	4	16	2,459
Mississippi		1	1	1	4	5	10	9	1	10			2	2		15	2			312
Missouri	118	40	158	21	37	112	170	253	26	279	10	2	81	47	25	120	32	13	39	6,683
Montana	12	8	20	1	5	23	29	14	5	19	6	2	3	3		16	2		5	697
Nebraska	11	3	14		10	11	21	44	5	49	1		11	4	1	11	3	5	4	920
Nevada		2	2		1	8	9	2		2			2			3		1		137
New Hampshire	20	3	23		11	18	29	9	2	11		3	9	4	2	24	7	1	2	490
New Jersey	120	50	170	21	52	169	242	91	28	119	6	7	70	51	5	127	86	11	18	3,860
New Mexico	1		1										1				1		1	88
New York	396	167	563	55	102	644	801	353	101	454	9	60	219	203	45	500	290	54	59	12,243
North Carolina	20	10	30	3	9	12	24	17	1	18	1			4		3	4	1	2	774
North Dakota	1	2	3		6	4	10	13		13						3	1		1	261
Ohio	207	60	267	4	60	147	211	185	23	208	6	10	103	336	3	143	48	24	21	5,088
Oklahoma	7	3	10	5	6	16	27	20		20		2	1	8		8	11		1	957
Oregon	2	5	7	2	5	22	29	13	6	19	3	2	17			26	5	1	2	512
Pennsylvania	243	111	354	25	62	289	376	328	56	384	8	17	143	798	20	196	119	35	39	8,518
Rhode Island	33	10	43	4	9	8	21	23	1	24	2	4	8	11		29	11	5	2	770
South Carolina	8	5	13		3	4	7	2		2				4		1	1		1	373
South Dakota	3	3	6		3	12	15	8	3	11			10	5		2	3		2	385
Tennessee	10	5	15		10	16	26	9		9	1		3	8		13	5	1		551
Texas	34	17	51	11	36	73	120	45	4	49	2	7	38	22	4	40	20	10	5	2,977
Utah	16	5	21		4	9	13	6		6	6		13	6	1	7	4	1	1	350
Vermont	24	4	28	1		10	11	8	3	11			5	3		7	2			282
Virginia	52	18	70	5	10	29	44	29		29		2	14	17		15	17	2		1,426
Washington	15	16	31		31	72	103	25	5	30	5	9	25	12		62	14	8	9	1,192
West Virginia	29	5	34	1	8	16	25	24	5	29	2		18	11	2	11	1	4	1	668
Wisconsin	79	36	115	10	30	107	147	137	10	147	7	1	49	26	1	107	17	8	25	2,568
Dist. of Columbia	48	14	62	2	3	39	44	15	7	22	1	3	21	12	1	51	33	1	2	1,123
Line Total	2645	1171		282	931	3167		2531	432		133	189	1623	2472	182	2586	1234	322	431	89,405
Group Total			3816				4380			2963										

HOW MUCH POWER CAN AN ENGINE PRODUCE?

(Continued from Page 8)

incorporating additional cylinders in the engine design has some difficulties, four of which were discussed in the preceding topic—namely, space considerations, increased fuel consumption, radiator problems and additional weight. These factors function to some degree in the same manner as they do when cylinder dimensions are increased.

Two other difficulties are: Manifolding and increased number of motor parts. Uniform distribution of the combustible mixture to the cylinders becomes increasingly difficult to attain as the number of cylinders is increased. The commercial motors of today could be improved quite materially if a more uniform air-fuel mixtture were made available to the cylinders. The increase in number of motor parts is self-explanatory.

Increased Engine Speed

Increasing the power of the internal conbustion engine through increasing speeds requires consideration of various factors. Higher inertia forces, increased gasoline consumption, and lubrication, radiator and valve problems are obstacles scattered along the higher speed route.

Figure 1 shows the increase in inertia forces on the crank pin with increased speed for three different engines—an eight cylinder automobile engine, and two commercial airplane engines. These curves also show to some degree the effect of increased weight of reciprocating and rotating masses on inertia forces. The lower curve involves one connecting rod, the intermediate curve involves a seven-cylinder engine, with a master rod and six link rods, while the curve for the nine-cylinder engine is based on one master rod and eight link rods.

Increased fuel consumption seems obvious in consideration of the greater volume displaced per unit time by the pistons. This increase is accompanied by greater quantities of heat liberation which introduce lubrication, radiator, and valve problems comparable to those already discussed under the heading of larger cylinders.

The fourth method of increasing the horse power output of the automobile engine is by supercharging. Thus far, the supercharger offers certain mechanical problems on account of the variable speed operation requirements. Rapid acceleration and deceleration of the supercharger rotor producing at all times uniform combustible mixtures for the cylinder must be made possible if supercharging is to become commercially successful in the automobile.

The increase in fuel charges by supercharging naturally means that the heat problems already discussed prevail to a degree proportional to the degree of supercharging.

Additional motor space is not necessary, inasmuch as the engine size is not increased by supercharging. Also, efficient use of the fuel is made possible from the knock standpoint.

Fig. 2 shows the increase in brake mean effective pressure with various degrees of supercharging. When power required for supercharging is deducted from the power developed, a net gain in brake mean effective pressure results, which is shown by the lower curve.

(To Be Continued)

New Dealer Appointments By States and Makes

CALIFORNIA

Studebaker—J. H. Veteran, Clarksburg; Del N. White, Folsom; J. H. Veteran, Walnut Grove; Lambert's Garage, Hopland; Grant's Garage, St. Helena.

Auburn—Auburn Fuller Company, Los Angeles.

Graham-Paige — Gail Krisher, Taft.

CANADA

Graham-Paige—Charette Garage, Dalhousie, N. B.

CONNECTICUT

Auburn—M. M. Rosen distributor, Hartford.

ILLINOIS

Studebaker—Cookson Motor Company, East St. Louis.

IOWA

Studebaker—H. E. Yarcho, Waverly.

Auburn—Joe Grainek Motor Sales, Fort Dodge; Centerville Motors, Inc., Centerville.

KANSAS

Graham-Paige—Wiershing Motor Company, McPherson.

KENTUCKY

Studebaker—Bengey Motor Company, Harlan.

MARYLAND

Graham-Paige—Chevy Chase Auto Company, Bethesda.

MASSACHUETTS

Studebaker—Pitcher & Symansky, Northampton; Boston Auto Exchange, Worcester.

Auburn — Charles M. Franklin, Dorchester; Tait Motor Sales, Holyoke; Ashland Garage, North Adams.

Graham-Paige — Uptown Motor Sales, Boston; Oxford Garage, Cambridge; Central Garage, Wakefield.

MICHIGAN

Studebaker — Dearborn Motor Sales, Dearborn.

MINNESOTA

Studebaker—305 Garage, Breckenridge; L. H. Powell Auto Company, Marshall; Lynch & Co., Wheaton; Jewett Company, Bemidji.

Auburn — Gufford Motor Sales, Faribault.

MISSOURI

Graham-Paige — McDavid Motor Company, Excelsior Springs.

NEW JERSEY

Studebaker — Henry Wieller, Bloomsburg.

NORTH CAROLINA

Auburn—S. & S. Motor Company, Asheville; Standard Garage and Sales Company, Hickory.

NORTH DAKOTA

Studebaker — Taylor Mercantile Company, Taylor; Frank E. Leifert, Jamestown.

SUPREME COURT TO PASS ON VEHICLE SIZE CONTROL LAWS

Washington, April 29.—The Supreme Court of the United States considered yesterday a test case involving the validity of the Texas statute enacted in 1931 regulating the operation of motor vehicles upon the highways of the state and limiting their size and the weight of their loads.

The case was appealed by motor carriers in Texas from a three-judge district court of the United States, convened in the southern district of Texas, which upheld the challenged provisions of the statute.

Counsel for the interested carriers contended before the court that the contested provisions bear no substantial relation to highway protection, are discriminatory, burden interstate commerce and destroy the value of approximately $150,000,000 of their property and business. The constitutionality of the statute under several provisions of the Federal Constitution was questioned.

The statute was supported by counsel for the state as being a reasonable exercise of its police power in the matters of highway conservation and protection and public safety. It was claimed to create no improper classification as between vehicles, commodities or persons.

NEW DE SOTO DEALER

Norwalk, Conn., April 29.—Lane's Garage, 193 Main St., has secured a De Soto and Plymouth franchise for Norwalk and vicinity, according to recent announcement.

CUMULATIVE NEW PASSENGER CAR

This table is repeated for comparative purposes only.

States	AUBURN GROUP			CHRYSLER GROUP					FORD GROUP			GENERAL MOTORS GROUP						
	Auburn	Cord	Totals	Chrysler	De Soto	Dodge	Plymouth	Totals	Ford	Lincoln	Totals	Buick	Cadillac	Chevrolet	La Salle	Oldsmobile	Pontiac	Totals
Alabama, 1931				10	11	6	5	32	664		664	35	2	691	3	4	1	736
Arizona, 1931				7	5	20	13	45	214		214	36	4	197	2	6	8	253
Arkansas, 1931				24	8	30	27	89	302		302	12	3	327	2	4	13	361
California, 1931	436	17	453	395	249	536	111	1291	5434	57	5491	912	147	3808	71	297	549	5784
Connecticut, 1931	71	1	72	95	85	127	23	330	791	7	798	234	52	836	22	97	267	1508
Delaware, 1931	7		7	27	1	1	7	36	179		179	44	4	168	6	18	34	274
Florida, 1931	25	5	30	70	11	38	29	148	833	6	839	95	8	809	3	24	88	1027
Idaho, 1931	4	1	5	12	11	27	10	60	192	1	193	19		187		12	16	234
Illinois, 1931	337	26	363	267	193	488	178	1126	3153	31	3184	469	74	3091	64	525	650	4873
Indiana, 1931	81	11	92	89	173	144	145	551	1721	4	1725	204	8	1904	5	226	268	2615
Iowa, 1931	36		36	98	25	150	70	343	1445	1	1446	137	6	1819	6	127	286	2381
Kentucky, 1931	18		18	64	30	93	57	244	739	1	740	47	7	949	1	16	59	1079
Louisiana, 1931	2	1	3	50	24	40	17	131	637	4	641	31	7	582	2	20	48	690
Maine, 1931	4	1	5	34	13	53	33	133	382	1	383	66	7	403	7	45	119	647
Maryland, 1931	39	1	40	78	20	58	44	200	890	5	895	136	10	1247	7	59	220	1679
Massachusetts, '31	172	7	179	254	63	292	107	716	3134	30	3164	568	59	2214	76	344	502	3763
Michigan, 1931	117	7	124	234	138	371	95	838	4011	17	4028	433	63	2833	34	469	557	4389
Minnesota, 1931	69	3	72	226	47	180	220	673	2046	9	2055	25	20	3035	13	263	438	4026
Mississippi, 1931				18	6	13	6	43	357		357	2	1	448		5	13	491
Missouri, 1931	105	10	115	145	84	255	187	671	2410	9	2419	323	28	3482	13	231	456	4533
Montana, 1931	7	2	9	35	18	31	30	114	326	1	327	45		373	2	18	56	494
Nebraska, 1931	3		3	38	7	41	43	129	721	5	726	48	4	707		52	63	874
Nevada, 1931	4		4	11	5	10	4	30	95		95	12	1	72		3		88
N. Hampshire, '31	7		7	19	13	35	19	86	338	2	340	44	1	299	1	51	76	472
New Jersey, 1931	213	8	221	290	86	221	61	658	2164	21	2185	568	86	2179	45	378	452	3708
New Mexico, 1931				1	1	11	5	18	81		81	19		70		5	4	98
New York, 1931	713	45	758	938	405	720	355	2418	6386	77	6463	1813	273	5982	154	955	1168	10345
No. Carolina, 1931	13	1	14	74	16	77	32	199	962	1	963	80	5	817	4	25	73	1004
North Dakota, '31	2	1	3	14	2	32	29	77	254		254	34		393		20	54	501
Ohio, 1931	249	14	263	298	204	240	177	919	3250	11	3261	306	31	3050	18	401	618	4424
Oklahoma, 1931	7		7	37	6	117	26	186	812	3	815	103	8	1059	2	18	135	1325
Oregon, 1931	22	3	25	30	20	43	14	107	460	1	461	53	2	458	1	31	42	587
Pennsylvania, '31	292	16	308	520	205	508	296	1529	3622	22	3644	772	99	4143	75	602	717	6408
Rhode Island, '31	46	1	47	66	37	62	23	188	426	3	429	70	9	363	14	20	107	583
So. Carolina, 1931	1		1	31	15	23	8	77	548	1	549	36	1	528		17	30	612
South Dakota, '31				33	9	39	26	107	245		245	37		330		65	31	463
Tennessee, 1931	5		5	23	14	49	18	104	694	2	696	51	4	774	7	41	37	914
Texas, 1931	10	3	13	172	97	234	91	594	2514	6	2520	329	22	2820	18	65	148	3402
Utah, 1931	9		9	20	9	33	10	72	273	1	274	41	1	297	3	14	26	382
Vermont, 1931	3		3	17	4	14	13	48	123		123	42	1	115	4	12	31	205
Virginia, 1931	10		10	52	43	85	40	220	1044	2	1046	87	6	1100	4	33	129	1359
Washington, 1931	35	4	39	72	73	82	58	285	877	3	880	115	7	685	2	94	91	994
W. Virginia, 1931	15	2	17	48	19	53	27	147	445	2	447	33	5	472	4	31	87	632
Wisconsin, 1931	78	6	84	99	68	250	82	499	1320	4	1324	233	12	1739	10	183	366	2543
Dist. of Col., 1931	43	1	44	60	48	75	22	205	909	7	916	91	11	739	7	80	114	1042
Line Total, 1931	3310	198		5195	2621	6012	2893		58423	358		9144	1099	58594	712	6006	9247	
Group Total, 1931			3508					16716			58781							84892

*Not in production. Austin, Durant, Peerless and Stutz included in the miscellaneous column.

$1,000,000 AUBURN SALES BRANCH OPENS IN LOS ANGELES

(Continued from Page 1)

the Cord Corporation. The interior is lined with matched walnut panels and the floor is polished marble.

A distinctive feature of this display room is the indirect system of lighting which was personally designed by Mr. Cord and installed under his direction. Built into the ceiling, twenty-seven feet above the floor, are 110 lighting units which shed a soft light over the entire room, evenly and without glare. Footlights just above the floor of the room supplement the ceiling fixtures.

Offices for retail and wholesale sales executives are located at the rear of the display room, also connecting with the service department and other sections of the building.

On the first floor of the building at the rear of the display room is the receiving service floor, with entrance and exit on to Mariposa Avenue. Two-way concrete ramps lead from this floor to service floors above and to the basement where storage space is provided for public cars.

Including the receiving floor, approximately 80,000 square feet of floor space is available for service work. The second floor, directly above the receiving entrance, includes the general repair shop, washing and greasing racks and the main parts department.

Special machinery and detailed equipment for more exacting servicing tasks are on the third floor. Adequate space has enabled the company to enlarge the scope of its service work, and the new equipment includes considerable precision machinery of a type approved by the factory. A complete new paint shop also is located on this floor.

Executive offices of the Auburn-Fuller Company are located on the fourth floor, which also includes space for storing new cars and a complete upholstering shop.

In the penthouse are headquarters of the Los Angeles Broadcasting Company and its radio stations, KFAC and KFD. Here also are the offices of Advertisers, Ltd., Western representatives of the P. P. Willis Corporation advertising counsel for the Cord Corporation and Auburn Automobile Company.

DETROIT OUTPUT EXPECTED TO SHOW GAINS DURING MAY

(Continued from Page 1)

production. From advance reports it looks as if this would be better than March by a fair margin, but not until the May returns are ready will we get the real upward trend in vehicle production for 1932.

Important automotive executives here expect the production trend in 1932 to follow somewhat the lines that were in evidence when the Model A was introduced. That year the Ford organization did not get into full speed production until after the spring buying season was far advanced. As a result the production curve for the industry, instead of peaking in May as it usually does, reached its high point in August, and this condition may very possibly be repeated this year.

BIG TRUCK FIRMS THREATEN TO QUIT N. J. IN TAX BOOST

(Continued from Page 1)

The Central Jersey Trucking Company, with the contract for trucking service in connection with the electrification of the Pennsylvania Railroad lines between Trenton and New Brunswick, will fuel its trucks in Pennsylvania, if the tax here is increased. "We use 500 gallons of gasoline a day," said Simon Rednor, president of the Central Jersey firm, "and a five-cent tax on that runs into money. We will be compelled to do what all other trucking companies in the Delaware Valley will do—go across the river to buy gasoline."

Leonard Cox, superintendent of the Anchor Warehouse Company, said his firm will also buy all fuel out of the state.

William Hoffman, manager of the Trenton Motor Express, stated that his company will buy its gasoline in Pennsylvania. He said his company's interstate activities are carried on between points from Princeton to Philadelphia, and that the trucks will be loaded with fuel across the border.

One large trucking firm, the Petry Express and Storage Company, will continue to buy its gasoline in New Jersey regardless of tax.

"Some measure has to be taken to provide these funds for the poor," said Frederick Petry, Jr., president of the company. "Our company will not go out of the state to buy gasoline if the 5-cent tax is put into effect."

The petroleum industry itself has come out as vigorously opposed to an increase in the tax. It is pointed out by leading producers that the industry is already suffering from excessive taxation in addition to the effects of the general depression in business everywhere.

The Public Service Co-ordinated Transport said the extra tax would mean an additional expense of $550,000 a year to them in operating the more than 2,500 buses.

In view of the fact that the Public Service already is a million dollars "in the red" this new burden, it is claimed, will be a severe blow.

ADVOCATES CUTTING DOWN ON MODELS

(Continued from Page 4)

little market there is left to get. It is better that we should continue at reduced volume at a profit rather than to strive for volume at a loss. I further believe that we must drop the attitude of trying to cater to every whim of the public in regard to styles, colors and so forth, when such catering costs us actual dollars and cents and does not appreciably add to our volume.

We easily can weed out a number of models that are slow moving and use the money tied up in them to invest in faster moving models. I do not think this would injure sales, as the inherent values of the cars offered today would make the prospective buyer willing to compromise between his ideas of what he would like to have and what the dealer has to offer. I also think that the industry as a whole must drop its low price policy and get back to a basis upon which it can sell its goods at a profit.

S. W. B., New York.

NEW SUPER-CHARGED DUESENBERG CHASSIS, 320 H. P., ANNOUNCED

(Continued from Page 1)

revolutions per minute. The supercharger is in constant operation and is noiseless. The intake manifold and the carburetor entrance to the super-charger are both heated with hot water taken from the radiator and returned to the cylinder block. The super-charged motor develops 320 horse power.

A convertible coupe on this chassis, Mr. Ames says, will accelerate from a standing start to 100 miles per hour in less than 17 seconds. This same car was recently driven 4 miles per hour in second gear. This model is equipped with chromium plated exhaust pipes that extend out through the hood and allow for a muffler cut-out immediately under the fender on the right side of the automobile. Ordinary louvers are dispensed with and chromium plated screen grids are used in their place, which add considerably to the appearance and distinctiveness of the car and make it readily discernible from the standard Duesenberg.

WISCONSIN PETROLEUM GROUP TO MEET MAY 25

Fond du Lac, Wis., April 29.—The annual convention of the Wisconsin Petroleum Association will be held at the Hotel Retlaw here May 25. Speakers will include W. W. Belson, secretary of the Wisconsin Allied Truck Owners' Association, who will discuss the ton-mile tax, which affects every jobber operating trucks with a licensed capacity of more than 6,000 pounds.

REGISTRATION STATISTICS, MARCH, 1931

Figures for March, 1932, will be found on Pages 8 and 9

	HUDSON GROUP			STUDEBAKER GROUP				WILLYS-OV'R'D GR'P			NON-AFFILIATED MANUFACTURERS									State Totals
	Essex	Hudson	Totals	Pierce-Arrow	Rockne	Studebaker	Totals	Willys-Overland	Willys-Knight	Totals	De Vaux	Franklin	Graham	Hupmobile	Marmon	Nash	Packard	Reo	Miscellaneous	
Alabama, 1931	7	3	10			12	12	11	34	45			1	3	3	2	5	1	1	1,515
Arizona, 1931	8	9	17			13	13	4	1	5				6	1	14	2		2	572
Arkansas, 1931	4		4	1		3	4	22	1	23			7	1		7			1	799
California, 1931	204	172	376	74		618	692	250	102	352		36	214	173	22	296	134	63	302	15,689
Connecticut, 1931	120	60	180	14		99	113	27	11	38		20	47	40	12	82	40	16	4	3,300
Delaware, 1931	7	11	18			7	7	13	1	14			1	1		11	7		9	564
Florida, 1931	51	28	79	3		23	26	21	8	29		8	34	20	11	23	9	10	29	2,322
Idaho, 1931	7	5	12			17	17	14	1	15		2	9	1		18	2	4	10	582
Illinois, 1931	300	125	425	41		331	372	251	55	306		10	114	147	41	287	132	38	165	11,583
Indiana, 1931	149	74	223	4		125	129	243	18	261		5	45	50	55	64	20	16	32	5,883
Iowa, 1931	122	50	172	2		68	70	213	10	223		1	21	25	9	68	16	11	34	4,856
Kentucky, 1931	50	20	70	3		35	38	56	11	67		2	11	23	9	12	8	7	26	2,354
Louisiana, 1931	28	13	41	3		16	19	13	3	16		2	16	13	4	48	8	1	5	1,643
Maine, 1931	98	35	133	1		33	34	24	7	31		3	5	8	4	39	16	9	1	1,451
Maryland, 1931	76	41	117	6		76	82	40	13	53		8	29	38	5	50	31	9	23	3,259
Massachusetts, '31	488	160	648	41		219	260	95	63	158		42	64	131	19	294	78	51	49	9,616
Michigan, 1931	416	169	585	8		157	165	184	36	220		2	92	67	11	111	32	43	51	10,758
Minnesota, 1931	147	103	250	9		173	182	264	34	298		2	70	114	14	125	58	35	212	8,186
Mississippi, 1931	4	6	10			8	8	5		5			4	9		13	1	1	2	944
Missouri, 1931	144	54	198	18		155	173	363	29	392		5	83	50	54	138	23	28	91	8,973
Montana, 1931	25	19	44	3		22	25	24	3	27		3	7	8	8	17	1	6	10	1,100
Nebraska, 1931	16	4	20			29	29	87	10	97		1	18	15	3	17	5	5	19	1,961
Nevada, 1931	6	3	9			10	10						2	2	2	2	2		2	248
N. Hampshire, '31	48	20	68	4		26	30	29	6	35		5	12	14	3	34	2	5	8	1,121
New Jersey, 1931	203	113	316	50		307	357	117	90	207		34	74	105	28	299	100	40	81	8,413
New Mexico, 1931	1		1			3	3	1	1	2					2	3			2	210
New York, 1931	717	333	1050	107		747	854	577	275	852		72	241	338	94	771	320	114	146	24,836
No. Carolina, 1931	56	24	80	3		15	18	19	2	21			13	7		12	12	1	12	2,356
North Dakota, '31	9	5	14			16	16	53	2	55			11	4	3	11		2	5	956
Ohio, 1931	317	107	424	11		227	238	381	72	453		11	75	97	39	148	52	38	100	10,542
Oklahoma, 1931	21	21	42	5		27	32	46	7	53			10	11		16	9	6	10	2,522
Oregon, 1931	20	13	33			50	50	13	5	18		5	32	2	4	21	3	6	28	1,382
Pennsylvania, '31	453	182	635	34		338	372	321	112	433		75	168	173	75	315	125	47	130	14,437
Rhode Island, '31	45	21	66	7		49	56	25	15	40		6	9	17	1	42	13	26	8	1,531
So. Carolina, 1931	10	9	19			5	5	3		3		2	3	7		7	1	3	11	1,300
South Dakota, '31	18	7	25	1		22	23	44	2	46			7	12	1	12	5		6	952
Tennessee, 1931	35	11	46	2		34	36	39	2	41		4	15	14	3	14	7	3	13	1,915
Texas, 1931	56	24	80	21		165	186	71	21	92		10	66	42	9	77	15	26	50	7,128
Utah, 1931	21	17	38			32	32	12	3	15		3	23	7	2	25	4	3	4	893
Vermont, 1931	25	17	42	4		6	10	14	2	16			4	6		10	2	4	2	475
Virginia, 1931	68	29	97	11		50	61	37	3	40		1	9	32	3	18	17	4	7	2,924
Washington, 1931	50	25	75	4		109	113	64	24	88		14	23	41	5	26	23	25	35	2,666
W. Virginia, 1931	51	13	64	2		19	21	54	8	62		3	20	16	6	11	8	2	8	1,464
Wisconsin, 1931	192	91	283	5		142	147	131	17	148		5	56	38	17	216	21	17	41	5,439
Dist. of Col., 1931	41	11	52	4		37	41	18	17	35		7	22	24	8	30	20	2	30	2,478
Line Total, 1931	4934	2257		506	*	4675		4293	1137		*	409	1787	1968	590	3856	1389	733	1817	194,158
Group Total, 1931			7191				5181			5430										

DID THE NEW FORD MEAN MUCH?

Reader interest always was and always will be a measure of publication value to the advertiser. Reader interest of a paper may be judged very simply by two things:

1. **The service it renders.**

   Anyone can judge this by comparing the editorial material of different media.

2. **The subscription price, which tells instantly how much the subscriber values the service.**

Subscribers for Automotive Daily News pay $12 a year. How much is a $1.00 or $2.00 publication worth to an advertiser as compared with a $12.00 publication?

Automotive Daily News published the first picture of the new Ford, but that was an ordinary event in the life of this publication, because it has the daily task of propagating news of all branches of the industry correctly and quickly.

That is why subscribers give up $12.00 a year.

In addition to spot news, subscribers get registration figures before they do through any other publication.

Engineering news, factory news, dealer news—news of all branches of the industry—are covered in this publication so quickly that it has reader interest unmatched by any paper in its class. Hence it has an advertising value unmatched by any similar publication.

As an advertiser you should also consider these exclusive advantages of Automotive Daily News:

1. **All advertising copy is visible.**
2. **No restrictions on advertising frequency.**
3. **Large size page.**
4. **Economy due to greater frequency possible with given expenditure.**
5. **Over 6 readers per copy.**
6. **Over 500,000 bonus distribution every year.**

Automotive Daily News

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